UNIVERSITY OF MARYLAND
LIBRARY
Founded 1813
SCHOOL OF MEDICINE

HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/mississippidocto2911miss

UNIVERSITY OF MARYLAND
LIBRARY
Founded 1812
JUN 1951
COLLEGE OF MEDICINE

The Mississi

VOL. 29 BOONEVILLE, MISSISSIPPI, JUNE, 1951 NO. 1

Library, Univ. of Maryland
School of Medicine, S. E.
Corner of Lambard and
Green Streets,

INDEX IN THIS ISSUE

Contents . . .

1951—MEDICINE'S FIRST YEAR OF GRACE
E. L. Henderson, M.D. 431

THE SURGICAL TREATMENT OF NODULAR GOITERS
W. H. Kisner, M.D. 434

SOME MEDICAL ASPECTS OF NUTRITION OF SCHOOL AGE CHILDREN
N. C. Knight, M.D., M.P.H. 438

MEDICAL CARE COVERAGE IN MISSISSIPPI
B. S. Guyton, M.D. 441

FIFTY-YEAR CLUB 446

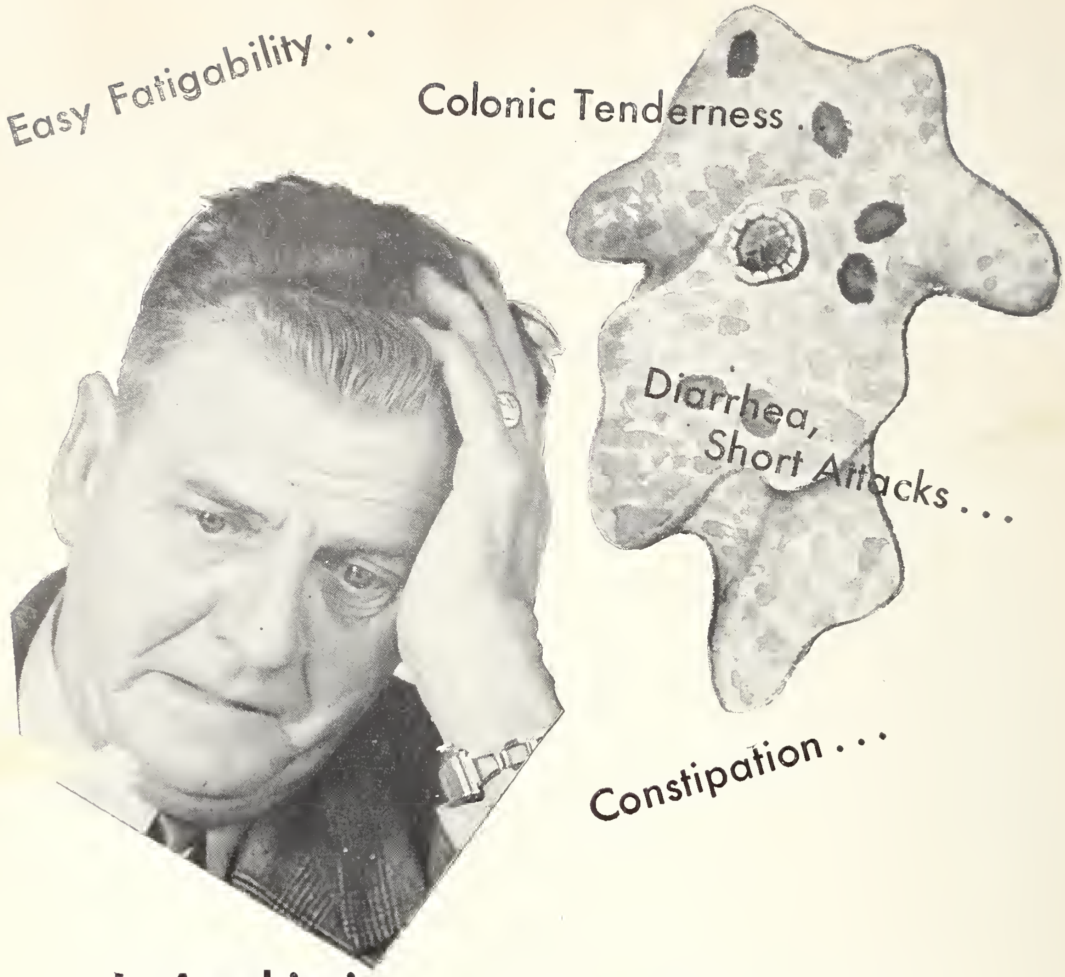
INDEX, JUNE 1950—MAY 1951, VOLUME 28 455

REMEMBER THIS TERM? *ft. elect.*

In 1876, when medicine shows
and wooden Indians were contemporary
—and Eli Lilly and Company had just begun—prescriptions which read *ft. elect.* (*fiat electuarium*),
meaning *let an electuary be made*, were common.
Since then, the compounding of crude medicinal confections in apothecary shops
has given way to the manufacture of standardized lozenges
in pharmaceutical laboratories. In place of the many venerable
but outmoded activities which occupied the time of his predecessor, constant study
of an ever-increasing amount of scientific data
is required of the modern pharmacist. The result is accurate dispensing
of improved pharmaceuticals—such as Lilly's.

ELI LILLY AND COMPANY · 1876 · 75th ANNIVERSARY · 1951

Lilly ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.



In Amebiasis—"It must be assumed that the carrier state is an active stage of the disease and deserves effective treatment. . . . It is accepted practice, therefore, to give the carrier an oral amebicide that will not inconvenience him or interfere with his normal activities. A full course of Diodoquin fulfills this purpose. . . ."

—*Selesnick, S.: The Treatment of Amebiasis, Connecticut M. J. 12:946 (Oct.) 1948.*

UNIVERSITY OF MARYLAND
LIBRARY
Founded 1813
SCHOOL OF MEDICINE

A potent oral amebacide, Diodoquin can be taken readily by ambulant patients for treatment of acute or latent forms of amebiasis.

DIODOQUIN® (diiodohydroxyquinoline) is relatively nontoxic, may be administered over prolonged periods and is well tolerated.

RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

42617

1951—Medicine's First Year of Grace*

E. L. HENDERSON, M.D.
President of the A.M.A.
Louisville, Ky.

It is a real honor and pleasure to be here in the Deep South once again—in the friendly, hospitable state of Mississippi, and in this lovely resort city of Biloxi.

This is one of my last speaking engagements before I retire next month as president of the American Medical Association. It has been a strenuous, busy year, but the spirit of cooperation shown by the nation's doctors has made it a stimulating experience—more than worth the effort.

Therefore, I want to take advantage of this visit to express my thanks and appreciation—to the Mississippi State Medical Association, its past and present officers, the individual doctors of Mississippi, and the members of your Woman's Auxiliary—for all your efforts in the National Educational Campaign, not just during the past year but for the past two and one-half years.

In this connection, I also want to pay tribute to the fact that Mississippi is one of the sixteen states whose legislatures have gone officially on record with resolutions against national compulsory health insurance.

The work which you have done here in Mississippi—and which medical societies, doctors and their allies have been doing all over the United States—is just one American aspect of the worldwide struggle between freedom and compulsion, liberty and tyranny. During my past two months of almost constant travel in official capacities, first in the Pacific and more recently in Europe, I have seen many facets of that struggle . . . from the mind and blood of Korea to the fear and apprehension of Continental Europe.

But here in America, despite a great amount of controversy and confusion over many different issues, there still is a basic spiritual strength, and there still is a fundamental faith in human freedom. I am happy and proud to be able say that American doctors, on the domestic issue of socialized medicine, have had the courage to plunge into the controversy, dispel much of the confusion and, above all, rekindle that American spirit and faith.

It is fitting, I think, to review now the progress of medicine's fight against socialization, and to look at present and future problems.

I should like very much to be able to stand here today, and say to you: "Our national campaign is all over" . . . "American medicine has won its fight against compulsory health insurance and socialization" . . . "we can forget about public affairs and public relations" . . . "we can relax once again in our respective ivory towers of professional and scientific activity." It would be a pleasure, I am sure, for me to say those things and for you to hear them. But if I spoke in that vein I would be indulging in hasy reporting. I would be guilty of slipshod diagnosis. And I would be failing in one of my major responsibilities as president of the American Medical Association.

I can report to you—and this is an honest pleasure—that American medicine has made great and demonstrable progress in the fight against compulsory health insurance in positive actions to help solve medical care problems by voluntary methods and in the drive to gain the approval and support of the American people in both phases of our campaign effort.

However, it also is one of my duties of leadership to warn you that the threat of socialization has not yet been eradicated; that numerous problems remain to be met and solved in a manner satisfactory to the American public; that much work is yet to be done; that medicine still has to win and hold the support of several important segments of American public opinion.

In this connection the excellent little magazine, **Medical Economics**, with which most of you probably are familiar, made some pointed and timely remarks in its December, 1950, issue. **Medical Economics**, in an editorial entitled The Decline of Ewingism, said: "1950 may go down in history as the last year in which full-scale national compulsory health insurance was a live issue."

Before I continue, let me emphasize that the key word in that paragraph is the word—"may."

For the editorial, after pointing out that the

---

*Delivered at the eighty-third annual session of the Mississippi State Medical Association, May 15-17, 1951, Biloxi, Miss.

November elections brought defeat to nearly 90 per cent of the Congressional candidates who favored compulsory health insurance, then went on to say: "Thus medicine is given two years of grace—two years to accentuate the positive, to extend and improve the voluntary plans, to clinch its case through action as well as through words.

"Once before (in 1946), when faced with a similar opportunity, we frittered it away. This time let's do the job right. It's the only sure death sentence for Ewingism."

I agree, emphatically. **This time let's do the job right. 1951,** in my opinion, should be regarded as only the first half of a two-year grace period—and two years are not a very long time. Neither this year nor next year can we relax and rest on our laurels. We must continue all positive, constructive actions which will help to demonstrate, once and for all, that America's medical care problems are **being solved by voluntary methods.**

If we in medicine fail to make this concerted effort, the sequence of events in 1950 and 1952 might prove to be a repetition of 1946 and 1948. And if **that** happens, the drumbeaters for socialized medicine will be out on parade once again, with greater fanfare than ever before. And along with them in the revival march will be all the other salesmen for the assorted wares of state socialism.

When I speak of those election years, however, I want to stress one very important point. I am not urging either victory or defeat for either the Republican or the Democratic party. Like many of you here today, and like thousands of doctors throughout the nation, I happen to be a life-long Democrat. I personally do not relish Republican victories at the polls, but at the same time I have less than love for any socializers who masquerade as Democrats. And I am sure that those of you who are Republicans feel the same way about Democratic victories, and about the socializers who hide behind the Republican label.

What I am urging—inside, outside, and all around both major political parties—is complete defeat for the philosophy of socialization, as applied to medicine or any other field of American endeavor.

For more than two years, medicine's National Education Campaign has been conducted on that non-partisan basis, and it will continue to be so conducted. The demonstrable progress which I mentioned earlier has been achieved only because we took our case directly to **all** Americans **everywhere**—only because we presented it as an issue transcending all politics and party lines. As a result, medicine's public support has come from all segments of America's political, economic and social life.

Medicine's broad, over-all progress in the fight against compulsion is clearly evident in four major events or developments:

First, since the beginning of our campaign more than 10,000 national, state, and local organizations, representing a massive cross-section of all America, have taken a public stand against compulsory health insurance, or any other form of socialized medicine.

Second, last October, during the American Medical Association's nation-wide advertising campaign on the issue of freedom versus compulsion, more than 65,000 companies, organizations, and individuals spent over two million dollars to advertise their support of medicine's position, and their faith in American voluntary methods.

Third, last November, in the polling places of America, the people administered specific, pointed rebukes to most of the advocates of compulsory health insurance, and they also threw a large amount of cold water on the general trend toward State Socialism.

And **fourth,** the nation's voluntary health insurance plans have been growing and improving at an accelerated pace during the past two years, and all reports indicate that they still are gaining momentum.

All four of those developments represent a tremendous amount of effort, progress and success. But they also point the way to a number of undeveloped areas and undone tasks. In the realm of public opinion, there still is a need for affirmative, educational effort—especially among specific groups. And in the practical solution of medical care problems, there still is a vast amount of work to be done—not only in the field of voluntary health insurance, but also in other fields involving the supply of medical service.

Despite the widespread public support which already has been mustered, medicine has not yet enlisted all the potential help which is available from the labor unions and working people of America. We **know** that scores of labor leaders and millions of rank-and-file workers agree with our stand against socialized medicine in particular, and socialism in general. One of our major tasks this year is to bring that latent support out in the open, ex-

pand it and crystallize it into official actions and resolutions by labor organizations.

As you probably know, dramatic progress in that direction was revealed last December at the A.M.A. Clinical Session in Cleveland. At that time, Mr. William L. Hutcheson, general president of the United Brotherhood of Carpenters and Joiners of America, announced that his union's twenty-sixth general convention had voted down a resolution to support the Truman national health program.

Mr. Hutcheson, who also is a vice-president of the American Federation of Labor, denounced socialized medicine and the entire socialistic philosophy of compulsion. He analyzed both of them as a serious threat to the rights and freedoms of labor and all other groups in America. And he said that he was happy to take a stand beside us in our fight for our convictions.

This courageous action by Mr. Hutcheson and the carpenters' union, which has 700,000 members, now calls for a vigorous follow-up. It should be regarded as the opening gun, the precedent, the example, for a barrage of similar actions by labor leaders and unions all over the country. We must take the Hutcheson message to every state, district, and local labor leader and labor organization in America. No other single activity will do more to hasten the final tolling of the bell for Ewingism.

According to the Wage Earner Forum, a continuous study of labor thinking conducted by the McFadden Publications, nearly one-half of the nation's wage earners already are opposed to socialized medicine, and more than one-fourth still are undecided. By simple arithmetic, therefore, it is obvious that vigorous effort could win us the support of three-fourths of American workers. And while we are at it, we might as well try to convert the remaining one-fourth, who now favor socialized medicine.

If we are to gain complete, permanent victory over Ewingism, we not only must win support from American labor, which has been the main target of government propaganda, but we also must get that support translated into **official, outspoken, public** action by labor unions—action that will penetrate the skulls of any politicians, planners, or national labor leaders who still refuse to recognize public opinion.

Meanwhile, there are some other areas in which soil remains unturned. On the distaff side, despite the fact that over 5,000 women's organizations have taken a stand against socialized medicine, we have not yet won enough support from such important groups as the Parent-Teacher Associations, the League of Women Voters, the American Association of University Women, and the nurses' associations. There is a need for much more grass roots action by local units of those groups .

Medicine has received staunch help from the American Dental Association, the American Bar Association, and many of their state units. But here again we should try to bring about closer relationships among physicians, dentists, lawyers, and all other professional groups who face the common threat of regimentation.

In order to expand and strengthen our position with labor, women's groups, other professions, and all of the American people, it will not be enough to present the case against socialized medicine. We must demonstrate by **actions,** as well as words, that we recognize the existence of certain problems, **and that** we **are doing something about them.**

In this sphere of positive, practical action, our major objective is to promote the maximum growth and development of all sound voluntary health insurance plans. Low-costs, comprehensive protection must be made available to every individual, regardless of where he lives, where he works, or what the color of his hair may be. Until that is done, many people will continue to flirt with the simple alternative of a government system which promises everything for nothing.

Another problem, and it is one which has been aggravated and given added prominence by the present national emergency, is the matter of financial aid for medical education. This is another area in which we must **prove** that American voluntary methods can do the job.

The board of trustees of the A.M.A., at the Cleveland session, took the lead by appropriating half a million dollars as the nucleus of a fund to be raised for the aid of medical schools throughout the nation. Pointing to the dangers of federal interference, the board of trustees said: "There is a growing public awareness that federal subsidy has come to be a burden, not a bounty, for it is bringing intolerable increases in taxation, and is dangerously increasing federal controls over our institutions and the lives of our people."

The board expressed the hope that its action will stimulate other professions, industries, businesses, labor groups, and private donors to help swell the fund for medical education, and it urged all American doctors to contribute individually and to take the lead in obtaining contributions from other sources.

In still other areas, involving patient-physician relationships, we must push the extension and full development of state and county programs for providing 24-hour emergency medical service, settling complaints of patients, placing doctors in communities which need them, eliminating excessive fees, and improving medicine's public relations in every way possible.

We must do all of these things—faster and better than ever—if we are to make the most of our two-year grace period, and bring about the final death sentence for Ewingism.

And regardless of what the present international crisis may bring in the way of tragedy, sacrifice, and patriotic duty let us keep our long-range sights clear. Let us hold to our fundamental convictions that freedom and initiative must be restored, and preserved, when world peace is once again assured.

The Surgical Treatment of Nodular Goiters*

W. H. Kisner, M.D.*
Natchez, Mississippi

SINCE Allen Graham's[1] report in 1924 there has been an increasing awareness on the part of both surgeons and clinicians of the potential dangers of the solitary adenoma of the thyroid. Lahey[2], Anglem[3], Cole[4], Horn[5], others have shown the high incidence of carcinoma originating in the solitary nodule of the thyroid gland (see Table I). Of equal importance with this increased interest is solitary adenomas on the part of clinical physicians is the gradual adoption by pathologists of a more standardized nomenclature of thyroid malignancy.

TABLE NO. I

INCIDENCE OF CARCINOMA IN SOLITARY NODULES OF THE THYROID

Anglem	9%
Cole	24.4%
Lahey	10%
Crile	24.5%
INCIDENCE OF CARCINOMA IN MULTINODULAR GOITERS	
Cole	9.8%
Anglem	4.8%

The classification proposed by Graham[1] and Shields Warren[6] and accepted by the American Goiter Association has helped to eliminate considerable misunderstanding (see Table II).

TABLE NO. II

CLASSIFICATION OF THYROID CANCER ACCEPTED BY THE AMERICAN GOITER ASSOCIATION

1. Low Grade Malignancy
    a. Adenoma with blood vessel invasion
    b. Papillary cystadenoma
    (a and b are frequently grouped together)
2. Moderate Grade of Malignancy
    a. Papillary adenocarcinoma
    b. Alveolar adenocarcinoma
    c. Hurthle cell carcinoma
3. High Grade Malignancy
    a. Small cell or carcinoma simplex (compact and diffuse type)
    b. Giant cell carcinoma
    c. Epidermoid carcinoma
    d. Fibrosarcoma
    e. Angiosarcoma

For many years it was the custom for pathologists to include the solitary nodular goiters and the multinodular goiters together. This, of course, has creased some confusion in regard to statistical studies of surgical thyroid material relative to the incidence of cancer in various types of goiters.

The author, while a member of the staff of the Mahorner Surgical Group in New Orleans, made a study of 172 goiters operated at two of the largest private hospitals in the city. Both of these institutions have had excellent pathology departments for many years. Out of this group of goiters it was not possible to separate the true adenomas from the multiple colloidal adenomatous or multinodular goiter, except those cases operated within recent years.

A definite differentiation between these types by pathologists has established, by actual figures, the potential danger of the solitary adenoma in the thyroid gland. This lesion is an even more dangerous tumor in children than in adults. Indeed, one might say that any abnormal mass in a child's neck is more dangerous than a similar mass in an adult's neck with respect to malignant change.

---

*From the Department of Surgery, Natchez Medical Group, Natchez, Miss.

Duffy and Fitzgerald[7] in a reported series of 28 cases of cancer of the thyroid in children between the ages of 4 and 18 years noted that in 10 of these patients the initial sign of the disease was one or more enlarged cervical lymph nodes. No palpable abnormality was observed in the thyroid gland in these ten patients.

The solitary nodule in the thyroid is usually a discrete adenoma. These adenomas are true tumors and are well encapsulated. Graham[1] and Warren[6] have divided the true adenomas into four groups depending on the degree of differentiation of the contained stroma in the nodule. The more immature the contained stroma, the more readily the adenoma can be differentiated on gross examination from the surrounding thyroid tissue. The more mature type of adenoma may present on inspection similar architectural structure to normal thyroid tissue but can be readily detected by the capsule. Excellent studies of the problem of the discrete adenoma of the thyroid as a causative factor of thyroid cancer have been made by Graham[1] and Warren[6].

Crile[8] in a recent article states that solitary nodules should be removed from the thyroid, not because the nodule may become malignant, but because it may be a cancer. He believes the adenomas that are reported by the pathologist as being malignant are malignant tumors from the beginning rather than malignancy arising in a benign adenoma. This viewpoint is difficult to accept when one considers the long duration of some of the discrete adenomas. Ward[9] et al reported a case of solitary adenoma present 38 years before malignant changes took place. In their study the average duration of time was 3.8 years before the patient consulted their clinic.

The danger of the multiple nodular or multiple colloid adenomatous goiter becoming toxic or causing pressure symptoms by continued growth in size has long been appreciated. It is now apparent that a certain percentage of multinodular goiters will become malignant. Cole[4] stated that 9.8 per cent of multiple nodular goiters became malignant. Anglem[3] reported an incidence of 4.8 per cent malignancy in multinodular goiters. The multiple nodular goiter is not composed of true tumors, but probably represents the end result of areas of hyperplasia followed by involutional changes.

It is the author's opinion that malignancy arising in a pre-existing multinodular goiter may develop in a true adenoma of the fetal or embryonal type buried among the colloidal masses.[2]

Two Illustrative Cases Are Presented

Case I.

The mother of an eleven-year-old girl requested an opinion regarding a small lump that had been presented for several years in the neck of the child. Examination revealed a firm discrete nodular in the right lobe of the thyroid gland. Removal of the nodular was advised. At operation the nodular in the right lobe of the thyroid was excised. The encapsulated adenoma was then cut across and inspected. Because the cut surface was suggestive of malignancy a hemithyroidectomy with removal of the isthmus was performed. The pathologist reported a Grade I papillary carcinoma within an encapsulated adenoma. The postoperative course was uneventful. Follow-up at the end of nine months revealed no evidence of recurrence. The patient was instructed to return every three months for examination at the end of the nine month period.

Case II.

A 53-year-old white female had noticed a goiter for one year prior to examination. The patient had no symptoms relative to the goiter, but she was worried about the presence of the lump in her neck. Examination revealed a multinodular goiter. There was no clinical or laboratory evidence of hyperthyroidism. Removal of the goiter was advised. At operation a bilateral subtotal thyroidectomy was done. Inspection of the cut surface of the specimen revealed multiple colloidal masses and a small discrete encapsulated adenoma in the right lobe with a marked difference in architectural pattern from that of the surrounding tissue. This was reported by the pathologist as a fetal adenoma in a multiple colloidal goiter. Although reported as a benign adenoma the fetal type of nodule buried among the colloidal masses represented a dangerous lesion and one that could not be detected on pre-operative examination of the thyroid.

Discussion

Prompt removal of a solitary thyroid nodule should be urged provided, of course, the patient's general condition will permit surgery. This is especially true if the patient is a child. Any nodule in the neck of a child must be viewed with suspicion.

A conservative attitude of watchful waiting for objective evidence, such as an increase in the size of the nodule or increase in hardness of the mass, is to be condemned. Against any conservative attitude is the report by Ward[10], who found that when carcinoma of the thyroid gland was diagnosed or suspected on examination, 80 per cent of these patients were dead at the end of five years, that when carcinoma was diagnosed at operation, 60 per cent were dead at the end of five years, and that when the diagnosis was first made on pathological examination only 20 per cent were dead at the end of five years. The inference in Ward's study is obvious. If surgeons are to save a higher percentage of cases of carcinoma of the thyroid, operation must be performed so early that not even the examiner suspects the presence of cancer.

The question one must now ask, "Is it necessary to remove all asymptomatic multiple nodular goiters?" The author believes this type of goiter is an ever present danger to the patient and, provided the general condition permits, it should be removed. There are arguments against this proposal: many needless operations, especially in endemic goiter areas, and the morbidity and mortality of thyroid surgery.

Against these arguments the author would like to point out that Means[11] reported an incidence of pressure symptoms in 65 per cent of cases of nontoxic nodular goiters at the Massachusetts General Hospital. Anglem[3] states that the multinodular goiter is not a simple benign process, but a progressive disease that goes on, first to develop toxicity in a significant percentage of cases, as indicated by the increasing incidence of toxicity as one ascends the age scale and secondly to produce serious mechanical disturbance, chiefly by compression and deviation of the trachea by retrotracheal, substernal, and intrathoracic extension.

Regarding the surgical complications, these should be minimal in the hands of the able surgeon and insignificant compared with the dangers of the multinodular goiter itself. The mortality from prophylactic removal of nontoxic multinodular goiters should be almost zero.

The surgeon who performs thyroid surgery should be familiar with the gross appearance of carcinoma of the thyroid. Frozen section diagnosis of carcinoma of the thyroid is not always reliable and the operator should be able to make a definite decision of what to do at the time of surgery on the gross appearance of the tissue alone.

Further treatment must be based on the final pathology report.

If wide excision of an adenoma is carried out and the cut surface of the nodule should appear suggestive of malignancy, the operator should then remove the greater portion of that lobe and the isthmus. Hemithyroidectomy carried out routinely in the presence of a solitary adenoma is advocated by Cole[4] and is certainly acceptable therapy in view of the high percentage of malignancy in these lesions.

In the presence of cancer of either moderate or high degree of malignancy (see Table III), removal of the lobe on the involved side, excision of the isthmus, and radical neck dissection on the involved side should be done. One exception to this general rule might be that of a child with malignancy of moderate degree that is still confined to the capsule of an adenoma. In such a case hemithyroidectomy on the involved side plus removal of the isthmus should be adequate therapy. This statement does not accord with the opinion of some, but the author believes that in view of the fact that thyroid cancer is a slow growing lesion as a rule in children, and that papillary adenocarcinoma offers the best prognosis in both children and adults, radical neck dissection need not be done unless there are palpable nodes in the neck.

TABLE NO. III

TREATMENT

1. Excision only or Hemithyroidectomy
   a. Benign adenoma
2. Hemithyroidectomy and removal of isthmus.
   a. Malignant adenoma or malignant cystadenoma if confined to capsule
   b. Papillary adenocarcinoma in child if tumor confined to adenoma.
3. Hemithyroidectomy, removal of isthmus, radical neck dissection on involved side plus postoperative irradiation.
   a. Cancer of thyroid of moderate or severe dedegree whether or not confined to thyroid capsule
4. Total thyroidectomy and bilateral neck dissection plus postoperative irradiation
   a. When both lobes of thyroid are involved by either moderate or severe degree of malignancy.

Thyroid malignancy of high degree in children or a tumor of moderate degree of malignancy that has broken through the capsule should be treated in a manner similar to that in adults.

Radical neck dissection is not considered necessary in the presence of a malignancy of low grade such as malignant adenoma.

According to Frantz[14] and her co-workers, the malignant adenoma often does not recur locally even after simple enucleation, does not involve the regional lymph nodes, metastasizes early to bone and only late to the lung. Although this tumor is classed in the group of low malignancy, the five year cure rate as reported by Lahey[2] is much lower than the five year cure rate for papillary adenocarcinoma (see Table IV).

TABLE NO. IV

FIVE-YEAR SURVIVAL IN 231 CASES OF CARCINOMA OF THE THYROID GLAND

(Lahey Clinic 1947)

Type of Carcinoma	
Adenoma, with blood-vessel invasion	71%
Papillary cystadenoma, malignant	62%
Papillary adenocarcinoma	80%
Alveolar adenocarcinoma	27%
Small-cell carcinoma	22%
Giant-cell carcinoma	17%
Fibrosarcoma	33%

Radical neck dissection on the involved side may be done at the primary operation if a positive pathologic diagnosis can be made or the former can be carried out several days later. When both lobes are involved by malignancy in either the moderate or high degree group, total thyroidectomy and bilateral neck dissection should be done. The neck dissection should be done in two stages. Cattell[12] recommends saving the internal jugular vein on one side.

Total thyroidectomy is at times difficult to achieve without destroying both recurrent laryngeal nerves and the parathyroids. In such instances it is advisable to leave a small sliver of thyroid tissue on one or both sides in order to preserve at least one recurrent laryngeal nerve and one or two of the parathyroids.

Postoperative irradiation should be carried out in all tumors in the group of high degree malignancy. Pemberton[13] and Cattell[12] have pointed out the poor results attendant on any type of radical operation in the presence of a diffuse small cell carcinoma or giant cell carcinoma. In such an instance where the cancer is far advanced partial to complete removal of the primary tumor and tracheotomy should be done and irradiation therapy then given.

Radioactive iodine has proved to be of limited value in the treatment of cancer of the thyroid. Successful therapy with radioactive iodine depends on the malignant tissue behaving to some extent as normal thyroid tissue and picking up the iodine. Since it has been estimated that only about 20 per cent of thyroid cancers have functional activity it is readily apparent that too much reliance can not be placed on such therapy.

At the American Goiter Association meeting in 1950 pulmonary metastases were reported as having regressed with radioactive iodine treatment. Bone metastases were reported as arrested temporarily, but these lesions did not show regression.

Summary

Evidence is presented to prove that the solitary encapsulated adenoma of the thyroid is a dangerous lesion. A high percentage of these discrete tumors, from 9 per cent to 24.5 per cent, will become malignant. The multinodular goiter is also not without danger of becoming malignant. From 4.8 per cent to 9.8 per cent of these goiters will become malignant. These latter figures were taken from a large series reported in the goiter belt of the mid-West and the other from a series reported from the Eastern seaboard.

All solitary nodules and also multinodular goiters should be removed. The latter, not only because of the possibility of malignant change, but also because of the possibility of pressure symptoms or toxicity.

Treatment of the various malignant lesions of the thyroid must be radical when the neoplasm is in the group of moderate or high degree of malignancy. Possibly one exception to this rule is the child with a papillary carcinoma or tumor of moderate degree of malignancy that is confined to the capsule of an adenoma.

There has been a gradual increase in the number of radical neck dissections for cancer of the thyroid over the past few years.

X-ray therapy is of value postoperatively and at times for palliative treatment.

Radioactive iodine therapy may at times be of value especially in the presence of metastases.

BIBLIOGRAPHY

1. Graham, Allen. Malignant epithelial tumors of thyroid. S.G.O. 39:781-790, 1924.
2. Lahey, F. H. Surgery of the thyroid gland. New Eng. Jour. Med. 236:46-62, 1947.
3. Anglem, T. J. and Bradford, M. L. Nodular goiter and thyroid cancer. New Eng. Jour. Med. 239:217-220.
4. Cole, W. H., Slaughter, D. P., and Majarakis, J. D. Carcinoma of the thyroid gland. S.G.O. 89:349-356, 1949.
5. Horn, R. C., Welty, R. F., Brooks, F. P., Rhoads, J. E., and Pendergass, E. P. Carcinoma of the thyroid. Ann. Surg. 126:140, 1947.
6. Warren, Shields. A classification of tumors of the thyroid. Am. Jour. Roentgen. 46:447-450, 1941.
7. Duffy, B. J. and Fitzgerald, P. J. Cancer of the thyroid in children: A report of 28 cases. Trans. Am. Goiter Assn. 1950.

8. Crile, George Jr. Factors influencing the prevention and cure of cancer of the thyroid. S.G.O. 91:210-214, 1950.
9. Ward, G. E., Hendrick, J. W. and Chambers, R. G. Carcinoma of the thyroid gland. Ann. Surg. 131:473-493, 1950.
10. Ward, R. Malignant goiter. Surgery 16:783-803, 144.
11. Means, J. H. The thyroid and its diseases. Philadelphia: J. B. Lippincott Co., 1937.
12. Cattell, R. B. Indications for neck dissection in carcinoma of the thyroid. Trans. Am. Goiter Assn. 1950.
13. Pemberton, J. de J. Malignant lesions of the thyroid gland: A review of 774 cases. S.G.O. 69:417-430, 1939.
14. Frantz, V. K., Larsen, W. G., and Jaretzki, A. An evaluation of radioactive iodine therapy in metastatic thyroid cancer. Trans. Am. Goiter Assn. 1950.

Some Medical Aspects of Nutrition of School Age Children*

N. C. KNIGHT, M.D., M.P.H.
Jackson, Miss.

FOR PROPER and good nutrition in school age children the following factors must be considered:

1. **Ingestion** of proper quality and amounts of food.
2. **Retention** of proper quality and amounts of food.
3. **Absorption** of proper quality and amounts of food.
4. **Assimilation** of proper quality and amounts of food.

Although many cases of malnutrition may be explained on the basis of unfavorable dietetic or hygienic conditions it must be borne in mind that nutritional impairment may be the result of physical defects or diseases. It is my purpose to point out some of the physical defects most frequently found associated with malnutrition in children who are otherwise regarded as "well" in that they are able to attend school and carry on the usual activities.

Tonsils, Adenoids, and Other Nasopharyngeal Defects—It is generally agreed that nasopharyngeal defects, especially tonsils and adenoids, are common causes of malnutrition in children. The effects of these may be manifested in two chief ways:

Either tonsils or adenoids, or more commonly both, may become enlarged and thus act as mechanical hindrances to the passage of food and air. Often the hypertrophy becomes so great as to block the air passages and to make swallowing difficult or next to impossible. In such cases, the lungs may be insufficiently oxygenated, the sleeping difficult, and the food intake greatly decreased. When a child's tonsils are sore, or so large that swallowing is a great effort, he will naturally eat as little as possible and will confine himself largely to liquids. Thus continually enlarged tonsils, though they may not be diseased, may cause undernutrition through insufficient sleep or food intake. Other nasal obstructions, such as nasal polyps or a deviated septum, may also produce similar results by rendering respiration difficult and thus contributing to disturbed sleep and chronic fatigue. Both tonsils and adenoids, moreover, may become diseased, and their possibilities for harm many times multiplied by the absorption into the bloodstream of the products of infection. The toxic products from diseased tonsils circulate throughout the body, causing a chronic depression of the tissues, a diminishing of the body's resistance, a loss of appetite, and a lowered state of health and nutrition. The repeated flare-ups of tonsillitis, moreover, keep many children below par nutritively. A severe attack of tonsillitis in a child of six to ten years may cause a loss of 10-15 per cent of the normal weight—an amount requiring weeks or even months to regain. Often the loss is not quite compensated before a second attack occurs, and thus the child gradually loses ground. The same effects may be produced by repeated "colds" and other types of upper respiratory infections. A loss of appetite is a common accompaniment of these conditions, often preceding the onset by several days and persisting for some time after acute conditions have subsided. If, as is frequently the case, another attack occurs shortly, arrears are not made up and chronic undernourishment results. Even more important, perhaps, is the fact that the child becomes finicky and pampered, his eating habits are upset, and these effects persist to his detriment after he has recovered from the attack. Some authorities believe that the seasonal slump in growth of children during the late winter and early spring months can be explained largely on the basis of infections and their inhibiting effort on growth.

---

*Presented to meeting of State Board of Health District Nutritionists, Jackson, Mississippi, February 16, 1951, by N. C. Knight, M.D., M.P.H., Director Division of Health Education and School Health Services, Mississippi State Board of Health, Jackson, Miss.

Teeth—There are three types of dental conditions that may be related to poor nutrition—decayed teeth, diseased teeth, and malocclusion. When teeth are missing, badly decayed, or malloccluding, there is often little chewing surface and nutrition may be impaired through inadequate intake of food through lack of mastication. When the teeth are sore, or chewing difficult for any of these reasons, the child naturally cuts down his food intake or swallows it without mastication. "My enemy," one boy always designated meat because he dreaded having to try to chew it with his broken and tender teeth. Another boy with equally bad teeth avoided this difficulty entirely by swallowing his food without the discomfort of chewing. Whether or not food so swallowed is fully digested probably depends on the character of the food, and also on the condition of the digestive tract. That food swallowed in chunks may escape digestion to some extent in children seems highly probable, though the importance of this as a cause of malnutrition has probably been exaggerated.

But teeth, like tonsils, may also become portals of entry for bacteria into the body. When a tooth is decayed to the pulp, a clear path to the blood and lymph circulation is opened. Pus pockets form at the roots of the tooth, and bacteria and their toxins have access to any part of the body. The results are the same as those described in the case of diseased tonsils, or which may arise from any other focus of infection, as the appendix, the gall-bladder, or sinuses. Though bad teeth do not necessarily cause poor nutrition, yet it is possible for them to do so by any of the ways described above.

Heart Disease—Heart disease may be one of the results of infection through tonsils, teeth, or other portals of entry of pathological organisms. Once acquired it may itself cause a lowered state of nutrition. The organisms which enter find lodging in the heart muscle, its lining or its valves, and there set up an infective process. During the active stage, a child presents a classical picture of malnutrition—pale, tired, drawn, with poor appetite and a loss of weight. Failure to gain is one of the best signs of continued infection. Even when the process heals the scar tissue remains and may serve as a continued handicap.

Tuberculosis—Tuberculosis, in common with other physical defects, bears both a cause and an effect relationship to undernutrition. Tuberculosis, as is now well known, is caused by a specific germ—the tubercle bacillus—and unless this bacillus is present the disease cannot exist. But tubercular germs are so widespread that there are probably few adults at least who have not at some time or other been infected. Unless some other factor than infection were concerned, therefore, few would probably escape the disease. This other determining factor is the soil in which the germ's planted. The state of nutrition is likewise a strong determining factor; a malnourished body will succumb readily to the infection, while a well-nourished body, on the other hand, has strong defenses with which to combat and vanquish the invading organisms.

But tuberculosis, once it gains a foothold, is probably the greatest foe to nutrition known. It not only sets up an ulcerative process in the organ attacked, thus eventually destroying its host, but the toxins elaborated by the growing bacilli are carried throughout the body with a resulting depression and actual destruction of body cells. The appetite is unfortunately also inhibited. Thus the affected individual who needs increased amounts of food to counteract the toxic destruction and to build up a well-nourished body actually desires and eats less than normal. It is merely another vicious circle. The malnourished body furnishes good soil for the development of tuberculosis, and tuberculosis in turn causes a greater degree of malnutrition.

Other Infectious Diseases—Any infectious disease, such as measles, scarlet fever, whooping cough, etc., may likewise cause malnutrition by the depressing effect of its toxins on the appetite and on the body cells. Fortunately, the malnutrition in such cases is usually temporary, for when the disease has run its course the toxins are counteracted by antitoxins, the appetite returns, and nutrition arises to normal.

It is not uncommon, however, for chronic malnutrition to have its beginning in such an attack. This is brought about through a failure to provide a sufficiently long period of convalescence following the subsidence of the infection. The child is allowed to return to school while his appetite is still poor and before he has regained the weight he has lost, and unless careful attention is given to his nutrition and rest, these arrears may never be made up.

Intestinal Parasites—In localities with hookworm this must always be suspected as a cause of malnutrition, for emaciation of an extreme degree often accompanies it. The nature and cause of hookworm diseases are now matters of general information.

Hundreds or even thousands of these parasites, fastened by means of their hooked mouths to the intestinal walls, suck the blood of their host drop by drop, day after day, unless they are accidentally or by treatment dislodged—and with it the food materials needed for energy and growth. As if this were not enough, poisons are also ejected into the bloodstream, thence to course throughout the body to work their deadly effects. The results of this double attack from blood starvation and toxemia in its extreme form is shown in a stunting of growth sometimes even to dwarfism, a severe anemia, and a lack of energy both mental and physical.

There are other types of intestinal parasites which children may harbor and which may have a profound effect upon nutrition. Among those most commonly found are pin worms, round worms, and tape worms. These find entrance to the body via the mouth through the eating of foods that contain the eggs or larvae—such as raw or underdone pork—or through playing with infected dogs or cats, the larvae being conveyed to the mouth by the hands. Infestation may be accompanied by indigestion, loss of appetite, disturbed sleep, and a variety of numerous symptoms, with a resultant detriment to nutrition.

Bacillary Diseases—Mention should also be made of some of the chronic bacillary diseases which commonly affect children. These are characterized by a chronic, persistent diarrhea and result in a constant drain of minerals and other food materials from the body, with consequent severe undernutrition. Undernourishment of an extreme degree also accompanies celiac disease—a rather rare condition characterized by inability to utilize carbohydrates and fats. This results not only in general, but also in qualitative undernutrition, because of the concomitant deprivation of minerals and vitamins.

Other Physical Defects — Numerous other physical defects may impair nutrition. As previously indicated, almost every type of bodily disorder or disease may have this effect. The ones which have been considered are those most commonly encountered in practical school health work. It should be emphasized, moreover, that in malnutrition thus associated with physical defects or disease, it is the diseased condition itself that should be considered the prime concern, and the malnutrition regarded as one of its accompanying symptoms. When the physical defect is corrected the malnutrition will often take care of itself.

Mental and Emotional Defects—Mental and emotional disorders also are a common cause of undernutrition in this age group, and require serious consideration.

New Type Chlorophyll Deordizing Tablet Announced by Rystan

Rystan Company has developed a new lozenge-type chlorophyll deordorant chloresium tablet, for more effective control of mouth, breath and body odors. Containing highly concentrated, purified water-soluble chlorophyll in its most active and palatable form, chloresium tablets are very palatable and permit prolonged retention in the mouth, thus insuring elimination of mouth odors for many hours.

A special advantage of chloresium tablets is that the saliva in which they dissolve acts as a buffer and prevents inactivation of their chlorophyll by acid gastric juice. This gives fullest benefit in curbing breath and body odors at their source within the body.

Medical Care Coverage in Mississippi

B. S. GUYTON, M.D.
President, Mississippi State Medical Association 1950-51
Oxford, Mississippi

IN DISCUSSING this subject, one cannot hope to know all the many services administered to the sick by various individual groups; but it is my purpose to name a number of organizations, professional, voluntary, official and civic, whose contributions should be considered.

Mississippi has slightly over two million people. We have only to take a look at what we have available in medical care, for this population, on the voluntary basis on which it operates and accomplishments which are so superior to those of nations which have socialized medicine, to appreciate fully the present system for good health which we enjoy. The pleasant working relationship between the private physician and his community agencies and groups is to be valued and preserved. As part of this cooperation, I wish here to present names and to discuss briefly the work of some of the more than thirty agencies which are contributing to the health of our two million people. There are others working in a modest but valuable way, whose efforts are not made public. I wish all of these could be known and mentioned. Some of these listed perhaps should be classed as fringes of medicine, but all of them make their positive contributions in one way or another to the health of the state.

Mississippi maintains five Charity General Hospitals in the following cities: Vicksburg, Natchez, Jackson, Laurel, and Meridian, with a total of 462 beds. In 1949 they treated 7682 patients at an average cost of $81.00 per patient.

Mississippi maintains three mental institutions—two for adults and one for younger people. At Mississippi State Hospital in Whitfield the number of patients in 1949 was 4032 and the appropriation amounted to $1,477,000.00, an average cost of $364.00 per patient.

East Mississippi State Hospital at Meridian, in 1949, had 725 patients with expenses of $330,000.00 or $543.00 per patient.

Ellisville State School, in 1949, had 400 patients with expenses of $215,000.00, or $537.50 per patient.

The State Penitentiary at Parchman maintains the "Sunflower Hospital" and there, 13,935 medical patients, 6,299 dental patients were treated, with an outlay of only $50,350.00. Prisoners were used for nearly all help, including several professional physicians and dentists who are prisoners.

Mississippi maintains the following institutions, which in varying degrees deal with health:

Columbia Training School
Oakley Training School
School for the Blind
School for the Deaf

Each of the Educational Institutions of Higher Learning of the state maintains a health department for the students. Student fees pay only a part of the expense; most of it is contributed by the state.

The "Mississippi State Hospital Commission" was established fifteen years ago. Through this organization, the state of Mississippi makes a biennial appropriation to take care of the indigent sick in "Community Hospitals" all over the state. This money is distributed to the counties of the state on a pro-rata basis determined by the population of each county. For the biennium of 1947-49 the appropriation was $1,091,898,00, and, of this sum, there was spent $818,616.72. The number of charity patients treated in the 73 community hospitals was 16,910 during the two years—approximately 8,455 each year, at the cost of $409,308.00—averaging slightly less than $49.00 per patient. The Mississippi Hospital Commission cannot use over two per cent (2%) of the appropriation for administrative purposes. The hospital rates for these indigent patients are fixed for all hospitals alike, and the hospitals and surgeons are not permitted to raise these rates nor collect extra money from the individual patients, except for special drugs. The physicians and surgeons give their services free of charge to these patients. Incidentally, through the "Mississippi Doctor" and the county paper which he publishes, our past president, Dr. W. H. Anderson, did much to stimulate legislation for establishing this wonderful program. This has proved to be one of the finest pieces of pioneer work ever established in any state in the union.

Through the State Board of Education, a "Crippled Children's Service" is conducted. Appropriation by the legislature supplemented by private donations and by grants from the Federal Government, have made it possible to develop a strong program. They conduct field clinics twice each year in seventeen (17) areas of the state. They secure operations, buy braces, crutches, artificial limbs and other appliances needed. During the last fiscal year, they used over two hundred and seventy-five thousand dollars ($275,000.00) in giving such service to crippled children of our state. Much of the service of the private physicians and surgeons is given free or at greatly reduced rates.

A "Cerebral Palsy Council of Parents" uncovered two thousand (2,000) cases of palsied people in Mississippi. Funds expended in efforts to rehabilitate many of these patients amounted to $110,000.00 in one fiscal year.

Under the State Board of Education, with the cooperation of the State Board of Health, there is an active health program being conducted in the public schools of the state. They have a medical correction program of finding defects and getting corrections made in children between two and eighteen years of age. In the last biennium 16,208 children had corrections made. (To date there have been more than 36,000 total corrections made since the program began.)

The "Mississippi Health Service" receives $50,000.00 a year from a legislative appropriation to help get corrections of defects in indigent children, and from this fund one half of the expense is paid, and if the parents cannot pay the other half, it is made a community affair, and often civic clubs contribute this half. This is a joint service between the State Board of Education and the State Board of Health. The physicians give much of their services without charge, and are paid for some work at a reduced rate.

Another program under the State Board of Education is the "Vocational Rehabilitation Service." During the fiscal year of 1948-49, over $400,000.00 were used in the rehabilitation of physically handicapped citizens of Mississippi between the ages of sixteen and sixty-five.

This service is chiefly for arthritics, blindness, deafness, tubercular, and mental defects which prevent people from being able to support themselves, but they handle other troubles also. This program is designed to get dependents back into self-supporting positions, to be an economic asset to the community instead of a liability. There are now more than three thousand cases on the rolls and there are this many new cases referred each year. This agency maintains a branch office at the Mississippi State Hospital for mental diseases, and one at the State Tuberculosis Sanatorium. They work with unfortunate patients in these institutions and give rehabilitation training to them while in the institution, and also when they get out on their own again. They also give follow-up service to the cancer cases handled through the cancer clinics. This program provides surgery by specialists in many centers in and out of Mississippi for correcting defects. The physicians and surgeons are paid on a fee basis usually much lower than what they get in private practice. The officers are contemplating the establishment of a Rehabilitation Center where all kinds of vocational training can be given at the same time physical restoration is being attempted.

Mississippi is one of the original fourteen Southern states which organized the "Regional Education Group." Through this organization students are sent from one state to schools in neighboring states for specialized training in subjects not provided for in the home state, and the schools giving this service are renumerated for their overall expense in teaching these students by the state in which they live. Many phases of study are covered but in 1949 Mississippi spent for medical education alone $39,500.00 in this manner.

The "Mississippi State Medical Education Board" was established in 1946, and appropriations by the legislature since that time from which loans were made to needy students have made it possible for many students to study medicine who could not have done so without this help. These students contract to go back to small communities approved by the Board, to practice for five years after finishing an internship. A student can borrow up to $1,250.00 per year for four years, or $5,000.00 total. After his training is completed, each year that the young physician practices in a location approved by his board, his indebtedness is reduced one thousand dollars ($1,000.00) plus interest. Five years of this practice completely liquidates his indebtedness to the state. We have over three hundred (300) students, white and colored, participating in this program at the present time—already thirty (30) who have completed study under this program are practicing in these small communities or in the armed forces. More than forty (40) are now interning and will be out soon. When those in the armed forces return from service, they will be obligated to complete their term of service under the State Medical Education Board. This is another instance in which Mississippi is a pioneer in establishing a great and unique service to rural medicine.

Within the past three years, a State Nursing Program has been established, with central offices at the University of Mississippi. Through appropriations made by the Mississippi Legislature, scholarships have been established for advanced nursing education. Up to this time, twenty-six (26) graduate nurses have taken advanced training in eleven large hospitals over the nation, with expenses paid by this program. Nine have already completed the graduate training and are back at work in Mississippi. Ten more will get back during 1951. Tuition fees are being paid for eighty-six (86) graduate nurses taking advanced work through extension courses, in Greenville, Vicksburg, Jackson, and Sanatorium. The University is giving instruction to one hundred and twenty-four (124) nurses in three large Meridian hospitals. The hospitals furnish the practical clinical work. Nurses trained under these plans are expected to assume a leadership in training undergraduates and in supervising nurses in the many hospitals now being put into operation over the state through the Hill-Burton plan.

"The Mississippi Commission on Hospital Care," working under the Hill-Burton Act, and with appropriations from our state, matching funds from counties and districts and with funds from the Federal Government, has completed since the program began, twenty-four (24) health centers and twenty-two (22) hospitals. The Commission has under construction in 1951, five health centers and eighteen hospitals. Total value of projects completed and under construction is $23,557,779.00. Mississippi was the first state in the nation to have its hospital and health center construction program approved by the Surgeon General of the United States Public Health Service.

The State Department of Public Welfare has an active program in giving special care, surgical operations and hospital expenses for indigent children under the age of 16 and adults over the age of sixty-five (65); to those who are not covered in the Vocational Rehabilitation Program.

The State Welfare Program is rendering numerous services other than medical, but two examples of the many medical services given are: planning for the unmarried mother and for the best interests of her child, and securing special medical care for any children coming under the welfare program. There are over 30,000 children being helped and over 4,000 of these are illegitimate. Quoting the Commercial Appeal of April 23, 1948, "Mississippi, with the aid of the Federal Government, is 'mothering' her homeless, dependent, and neglected children."

The Voluntary Tuberculosis Association collected in 1949 from donations, $68,000.00. Six per cent of this went to National Headquarters; the balance was spent in this state on such programs as paying expenses of children in the Tuberculosis Preventorium, buying medicines, transportation, and paying expenses for an occasional case in the Sanatorium.

The "Cancer Society" received from voluntary donations in 1949 one hundred twenty-one thousand five hundred dollars $121,500.00). Forty per cent went to the National Society and sixty per cent of this was used along with fifty thousand dollars appropriated by the state to aid indigent cancer patients and to promote cancer graduate courses for the doctors of the state. Here again, the surgeon's services are free.

In 1949 from the March of Dimes drive, the sum of $231,000.00 was collected in Mississippi. Although 50 per cent of this went to the National Foundation for Infantile Paralysis, more than this 50 per cent was returned to our state that year. To be more exact, the sum spent on polio in Mississippi in 1949 was more than $239,000.00. Three hundred and fifty-nine cases of polio were treated. In Vicksburg, two clinics are maintained for treating these unfortunate victims of polio, and for giving rehabilitation training during and after convalescence.

The Veterans Administration at Jackson, during the last fiscal year treated 33,662 cases, all Mississippians. The Veterans Hospitals on the Coast has a daily census of over 2,000 cases—many of these are Mississippians.

The Kellogg Foundation is starting a research and promotion program working with clinical laboratories. They have allocated to this program, in Mississippi, $10,000.00 per year for three years. The Kellogg Foundation is also offering $25,000.00 per year for five years to make an "Eyesight Conservation Study" in our state.

In one fiscal year (1949-50) the Rotary clubs in Mississippi contributed to the Crippled Adults Hospital in Memphis over $25,000.00 and sent many patients there for treatment.

The Lions clubs are helping the indigent near-blind, and children needing glasses by paying for examinations, for glasses, for treatments, for Braille writers, and for walking canes.

The Kiwanis clubs have as their objective helping the underprivileged children and are, in many instances, contributing funds for health problems among these children.

The Business and Professional Women's clubs, Pilot clubs, Junior leagues, American Legion auxiliaries, junior auxiliaries, and many other civic clubs are contributing liberally to needy people for health as well as living necessities.

"The Mississippi Society for Crippled Children and Adults," a voluntary non-profit organization of citizens, maintains an office and staff of workers who search for those handicapped people who cannot help themselves and they supplement and work with other agencies (state and federal) in getting these people cared for, and they do much independent work without the aid of other programs. This society is supported by funds contributed by interested people.

It is estimated that at this time twelve or thirteen per cent of our population carry voluntary health insurance. Much of this is for both hospitalization and surgeons fees. Blue Cross-Blue Shield Insurance was activated in Mississippi January 15, 1948. Already this plan has over 105,000 Mississippians enrolled and the number covered by this insurance is increasing by more than 4,000 each month. Other insurance companies combined are probably gaining an equal number of policy holders.

All Mississippians should appreciate our excellent State Board of Health. I cannot do justice to this great organization in a short paper of this nature, but briefly shall mention and discuss the following services:

1. Preventable disease control
2. Vital statistics
3. Public health statistics
4. Free laboratory examinations, by the thousands
5. Industrial hygiene
6. Sanitation
7. Material and child health services
8. School Health services
9. Health education
10. Nutrition services
11. Child guidance clinics
12. Medical library

The work being done in each of these is excellent. It would require more time to describe any one of these. I can only say that this fine work, instead of taking practice from physicians, is making more work for them by bringing to light the need of treatments through education of the public. The Board of Health is completely removed from politics. Three physicians are recommended for each place on the Board by the Mississippi State Medical Association. The governor makes appointments from these recommended.

Eighty of eighty-two counties in the state have full time health departments. These county health units together with the work of the central organization reach into every nook and corner of the state, and this work—**supported and supplemented by private practitioners**—has accomplished amazing results.

As evidence of disease reduction progress, I mention only a few examples which are typical of many. A comparison of deaths from preventable diseases from 1925 through 1949 reveals the following picture of progress in combating diseases and conditions which are preventable.

Another communicable disease, syphilis, because of its crippling effects in mental illness, heart conditions, and blindness, has received a concentrated attack by public health and private medicine. Again the record is one to be proud of under a voluntary plan of medical care. Comparing the findings from mass surveys in 1949 in a number of counties with previous figures on the number of new cases, it is becoming evident that syphilis has been reduced as much as 50% in Mississippi. During 1949 alone 15,000 cases of syphilis were treated in the rapid treatment centers in addition to the number of cases that have been under treatment by private physicians.

Four mobile buses are now in continuous move over the state to x-ray the chest of every citizen from fifteen years of age up. Figures show that more cases are being discovered at an early stage and that more victims are therefore recovering. Deaths from tuberculosis were at the extremely high figure of 1,855 in 1925, but were reduced to 581 in 1949. The highly efficient superintendent of the Sanatorium recently told me that for the first time in the history of the institution they have no applicants for admission under forty years of age.

YEAR	TYPHOID FEVER	MALARIA	PELLAGRA	SCARLET FEVER	TUBERCULOUS
1925	470	411	561	10	1855
1949	3	5	17	0	581

YEAR	WHOOPING COUGH	DIPHTHERIA	SMALLPOX	Diarrhea and Enteritis (under 2 yrs. of age)
1925	127	130	4	586
1949	34	32	1	161

During 1949 there were only 147 mothers who lost their lives at childbirth as compared to 435 in 1925.

Heart disease, the number one killer in Mississippi today, is a challenge to private medicine and public health. A lay education program such as that carried on in cancer and other disease control programs has been initiated by the Board of Health. Our Mississippi State Medical Association has a "Heart Committee' working on this problem and it is hoped that this next year will show definite program planning in heart disease control.

In discussing what the State Board of Health and other agencies have accomplished, I am still mindful of the mass of physicians of the state, the private practitioners, who have played a tremendous part in improving the health of our state. There has been, and, I hope, always will be, a cooperative spirit between the practitioners and the Board of Health—neither group alone could have accomplished such fine results without the other—neither should be jealous of what the other is doing. What we are after is prevention of suffering and of illness, and the saving of lives, and each group should welcome what the other has done and is doing.

It is estimated that the private practitioners are seeing approximately 20,000 patients daily in Mississippi. Probably 2,000, or 10%, of these get free service because of their inability to pay. We need more physicians.

Mississippi has had a two-year medical school for forty-seven years. Our graduates do their junior and senior work in established four-year schools all over the nation. We have in the pre-construction stage at this time, a four-year medical school and teaching hospital. The funds have been secured. When these institutions are in operation they will exert a powerful influence on the quality of medicine practiced in the state. They will train more physicians, more nurses, more x-ray and laboratory technicians, and will be a source of well-trained dieticians. They will lift the medical facilities of the state to a higher plane!

Through extension courses the older practitioners will be brought into contact with the later developments of medicine. The medical school and teaching hospital will be prepared to give expert service to patients who need ultra-specialized help and will keep many patients in the state who otherwise would be going elsewhere for treatment. The Outpatient Department for needy local patients will serve a great function for ambulatory sick people.

The four-year medical school can be integrated into the existing structure of the overall health program of the state. The value of vital statistics can be improved by teaching this subject in the undergraduate curriculum. The nomenclature can gradually be standardized for better tabulation and more accurate data.

The state laboratory service for patients all over the state will become more appreciated by the physicians to the ultimate benefit of all of our citizens. Laboratory facilities for diagnosis of unusual diseases and for unusual procedures in diagnosis of more common diseases will be made available.

Research will be stimulated and medical research grants made easier to obtain.

The medical library service can be made more effective by combining the Medical School Library with the State Board of Health Library, and by getting the cooperation of the State Medical Association in building the library facilities and service to a superior quality.

An approved interneship, residency, and fellowship program for Mississippi medical students will be established. Faculty staff members can integrate the work of the Medical School with the physicians and regional and county hospitals by making periodic visits for conducting clinical consultations on the patients accumulated in these hospitals. The nursing school can likewise cooperate with the smaller hospitals in training more and better nurses.

The hospital will establish a competitive standard for other hospitals in the state and the four-year medical school will become the medical center from which will emanate inspiration as well as scientific advancement in our profession and will be an inducement for physicians trained in more restricted specialties, such as clinical neurology, psycho-analytic psychiatry, plastic surgery, physical medicine, etc., to come to Mississippi.

The Mississippi State Medical Association is active in many phases of development. At this present session it has under consideration the establishment of a Public Relations Department. We have a Planning Committee which is making recommendations for years to come. Our Education Committee is collaborating with the architects and Building Commission in trying to get the best possible four-year medical school established. Members of this committee have visited many other schools and hospitals with the architects and Building Commission and are continuing to give time and advice on this problem. The Cancer Committee is very active and also the Heart Committee. Other committees also are contributing in a very positive way toward making our Association better and better.

Summary

There is one well established fact (which all physicians already know), that there are no conceivable illnesses that need be neglected for the want of a physician's care in Mississippi. The very poor routine patients are taken care of through the appropriated county per capita funds in 73 community hospitals over the state. To these patients the physicians give their services free. Such cases as polio, tuberculosis and mental diseases are treated in specialized hospitals. Indigent cancer cases are cared for in several hospitals especially equipped for giving such service, and the surgeon's services are contributed free of charge. The various other programs or agencies mentioned above take care of rehabilitating the handicapped. Anyone with any kind of illness, regardless of financial ability, can get proper care for the asking. Physicians never refuse their services to indigent patients.

Mississippi is not at the bottom of the list nor even in the middle or lower third among the states in dealing with the health of her citizens, but she stands out in the forefront in many phases of health work. I don't believe any state has a more efficient public health service. Mississippi is a pioneer in distributing appropriated funds to all the counties in the state for the care of indigent patients in small community hospitals. She is a pioneer in the State Medical Education—that of subsidizing needy medical students who will be required to practice in rural communities for a time. Last, but not least, Mississippi has well-trained, highly skillful, scientific professional practitioners who literally live the ideal, "Service above self."

Fifty-Year Club

On Tuesday, May 15, 1951, a luncheon was given for members of the Fifty-Year Club, Mississippi State Medical Association, in the Sun Room of the Buena Vista Hotel by Dr. W. H. Anderson. Members of the Club, honorary members, and invited guests present included: Dr. W. H. Scudder, Dr. John G. Archer, Dr. J. S. Sanders, Dr. L. L. Minor, Dr. A. G. Everett, Dr. E. C. Parker, Dr. James G. Thompson, Dr. T. M. Dye, Dr. E. J. Mathis, Dr. B. S. Guyton, Dr. Harvey F. Garrison, Dr. W. W. Crawford, Dr. J. Rice Williams, Dr. V. B. Philpot, Dr. W. Jeff Anderson, Dr. Felix J. Underwood, Miss Cleta Brinson, Dr. W. L. Little, Dr. J. P. Wall, Dr. John B. Howell, Dr. Lamar Arrington, Dr. D. S. Pankratz, Mr. C. P. Loranz, Dr. E. L. Henderson, Dr. W. H. Frizell, Dr. Seale Harris, and Dr. W. H. Anderson.

Dr. W. H. Frizell, president of the Club, presided and read a letter from Dr. Rudolph Matas, honorary member of the club of New Orleans, in reply to a greeting which he sent him on his ninetieth birthday in September, 1950.

After introducing the guests and members of the Club present, Doctor Anderson presented Dr. Seale Harris, excerpts from whose remarks follow:

"Last week I had the privilege of addressing the Louisiana State Medical Association and while there I went to see Doctor Matas and spent two hours with him. He is now in his ninety-first year. You will remember he lost one eye about thirty years ago. The other one is failing rapidly and he gets out infrequently. He sent you messages of affection and esteem and discussed having a portrait of Dr. Gus Evans for which arrangements were being made to present it with appropriate ceremonies to Tulane soon.

"It is a great distinction, and there are some reasons, for being a member of the Fifty-Year Club. First, it is the survival of the fittest, one-half heredity and one-half environment. There are no people in this world who have better heredity than the white people of Mississippi with less than 2 per cent of foreign-born population and descent. I know of no state in which there is a better class of people. Right thinking and right living is the system you people have followed. You want to become members of the Seventy-five Year Club, and I believe there are prospects that some of you will belong.

"Health should not be measured chronologically. In the comparison of President Truman with MacArthur we observe that MacArthur is 71 years old, but in the prime of his life. He is serene, thinks straight, acts straight. I would recommend MacArthur for any insurance he wanted for a ten- or twenty-year policy. Truman is 67, but he is senile. This no doubt accounts for some of the things he has done. MacArthur has lived the right kind of life. He thinks straight—Truman the other way. I don't believe Truman has ever had a straight thought in his life, and yet he holds the destiny of nations in the 'hollow of his head.'

"Membership in the Fifty-Year Club behooves us to take better care of ourselves than we have been doing. It is foolish to try to do as much work as we did when we were younger. We have seen many doctors killing themselves practicing medicine. Benjamin Franklin said, 'The Lord takes care of those who take care of themselves.' No one can take care of thee except thyself. Take care of yourselves. I have been making a study of longevity and have undertaken writing a book—"How to Live Long and Prosper." Regularity of life is the important thing. A doctor as he goes along should quit doing night work. Get regular rest. As we grow older we need more sleep, at least nine hours. Do like MacArthur, have an hour's siesta in the afternoon. I have been doing that for 60 years. It makes the last half of the day as fresh as the first half.

"Food is a very important thing in longevity, probably the most important thing in longevity —both the quality and quantity. I have never seen a centenarian overweight. I interviewed Count Greppi in Rome who lived to be 103 years old. He was 99 when I interviewed him. I said to him, 'To what one thing do you contribute your living?' He said that he wore the same clothes on his ninety-ninth birthday that he wore on his twenty-first. There is something in liver that promotes longevity. All of you gentlemen should eat liver three times a week—it contains all of the vitamins. Get some fruit juices, especially vitamin C that you need badly. You need exercise, but you don't need excessive exercise. You need friction on your skin. Use two towels after a bath—one to get friction. Right thinking and serenity are important. People who worry do not live long. Worry about money will kill people quicker than anything. You have got to learn to be serene. 'Live this day' as Osler said."

Doctor Frizell presented Dr. E. L. Henderson, president of the American Medical Association, who said, "I am not quite eligible for your Fifty-Year Club, but you would be surprised how close I am getting to that age." He said that he was very much interested in Doctor Harris' remarks and that he wanted to agree with everything he said. He told of having been in MacArthur's home in Japan two years ago and again of having been with him in a conference just one week before he was relieved of his command. He stated that he felt MacArthur was the greatest living man today, averring, "We need more MacArthurs in this country and in the world."

ODDS FAVOR WIFE SURVIVAL OVER HUSBAND

The average wife in our country can look forward to many years of married life (barring divorce). As an illustration let us take the case of a woman 25 years of age who marries a man of 30.

According to the mortality of the white population in 1948, the expectation of life is 40 years for the husband and 49 years for the wife. Their joint expectation of life is 36 years. That is substantially greater than the expected joint lifetime at the turn of the century.

In 1900 the average marriage at these ages would have endured only 28 years before one of the spouses died. When a marriage is dissolved by death, it is the wife who is likely to survive; currently the odds are two to one that the wife will outlive her husband.—Statistical Bulletin, Metropolitan Life Insurance Co.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton .... Oxford
President
Dr. J. G. Thompson .... Jackson
President-elect
Dr. T. M. Dye .... Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. .... President
Greenville, Miss.
H. T. Smith .... President-elect
McGehee, Ark.
L. T. Carl, M.D. .... Vice-President
Jackson, Miss.
D. T. Owens, M.D. .... Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. .... Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

STATE MEETING FINE SUCCESS

The annual meeting of the Mississippi State Medical Association held at the Buena Vista Hotel in Biloxi May 15-17 reached a high point in almost every respect. President B. S. Guyton broadened the field of endeavor for the association during his tenure of office, his address on medical coverage in Mississippi culminating his efforts in a masterful way. Every citizen in the state should read this paper. Dr. Elmer Henderson of Louisville, Ky., president of the American Medical Association, brought the association a most informative and inspirational message. Dr. E. R. Nobles was the orator on President's Night, his tribute being to Dr. Hugh Southerland who passed on many years ago.

Mr. C. P. Loranz, executive secretary of the Southern Medical Association, was a welcome guest, as was Mr. Rember, public relations representative from the American Medical Association.

The scientific programs were unusually good and quite well attended.

Dr. Seale Harris of Birmingham was the guest speaker to the Fifty-Year Club. A member of the club, the fifty-year men fully enjoyed his address and the entire association was delighted again to have him.

The Woman's Auxiliary, for more than a quarter century steadily growing in activity and broadening its field of service, brought its sessions to a climax with the Doctors' Day luncheon. The attendance was excellent and the occasion was highlighted by the guest speaker, Editor Hodding Carter of Greenville, who delivered the address. His message was charged with human philosophy of challenging depth and his review and sidelights on world affairs gripped his hearers with dynamic persuasion.

The banquet night held only levity, with drawing of prizes and an entertaining after-dinner speaker, Mr. Justin Wilson, whose sparkling wit, keenly observing mind rang the bell on timely and important subjects.

The past-presidents were breakfast guests of Drs. E. C. Parker and B. B. O'Mara. Eighteen were present with eight absent. Dr. W. W. Crawford of Hattiesburg, dean in point of tenure, received recognition for serving in 1906-1907. Drs. Guyton and Thompson and Mr. Loranz also attended.

Dr. James Grant Thompson of Jackson was installed as president at the close of the meeting, Dr. Lamar Arrington of Meridian becoming president-elect. The house of delegates' chief debate pivoted on whether to keep the amendment making dues to the American Medical Association compulsory. Deep and honest convictions differed on this point. But lest a vote for deletion might be misunderstood and support of the A.M.A. be questioned for service rendered, the vote was decidedly in favor of keeping the payment compulsory.

The spirit and the fellowship in the meeting were a benediction.

The next meeting of the Association will be in Jackson with the Robert E. Lee Hotel as headquarters, May, 1952.

COUNCIL DEPLORES MALPRACTICE SUITS

The Council deplores the tendency of the general public and the legal profession of the filing of suits for damages in malpractice suits.

The Council urges each and every member of the Association whatever may be his style of practice to avail himself of the services of recognized liability insurance on a group plan such as that offered by the United States Fidelity and Guaranty Company.

The Council urges that all members be extremely careful in making remarks to patients concerning treatment rendered any patient by a former physician. These remarks often lead to misunderstandings and sometimes suits for damages.

Respectfully submitted,
E. C. Parker, M.D., Chairman
H. C. Ricks, M.D., Secretary

Editor's Note: The above we think is mighty good advice from the council of the state medical association. It is more important than ever to pledge oneself to give service that can not be questioned and to protect one's confréres. But at the same time insurance is needed. It is good business to make more sure with insurance. Let us heed the admonition of our council.

News and Comment

TO MEDICAL PROFESSION OF MISSISSIPPI

At the meeting of the House of Delegates of the Mississippi State Medical Association on May 17, it was decided by a vote of 64 to 5, that members of the Mississippi State Medical Association continue their membership in the American Medical Association.

The above action is justified by the simple fact that we are the beneficiaries of the work of the American Medical Association, and especially in its current effort to prevent the socialization of our noble profession.

Let's all get together now, pay our dues, and be united in organized medicine fight to preserve our precious heritage.

There are only three ways to be exempt from payment of American Medical dues and retain its benefits. They are:

1. To have retired from the practice of medicine.
2. To be declared by the component county society that payment of dues would work a hardship on the doctor and this action be confirmed by the state association.
3. To resign from the association prior to December 31.

It is right and proper that we, the beneficiaries of the years of medical progress, should support the all-out-and-out fight now being waged against the socialistic group in Washington who wants to subordinate the profession to political control.

J. P. Wall

MEMPHIS BAPTIST HOSPITAL RAISING FUNDS

A total of 60 youthful student nurses from Mississippi communities are currently in training at Baptist Memorial Hospital School of Nursing in Memphis, Tennessee, according to Dr. Frank S. Groner, Administrator.

Baptist Memorial Hospital is currently seeking $2,000,000 for its building and development fund in order to add 250 urgently needed beds so that the increasing number of patients from the mid-South may be given full and complete care.

POSTGRADUATE COURSE

The Michael Reese Hospital Postgraduate School is offering a two-week course in "Diseases of the Endocrines—Physiology and Diagnostic Methods." This full-time intensive course will meet from July 9 to July 21, 1951, and consists of a balanced program of basic information and clinical applications.

A full-time intensive course in "Hematologic Diagnosis," under the direction of Dr. Karl Singer, will be presented by the Michael Reese Hospital Postgraduate School from July 23 to August 4, 1951. This two-week course offers a review of the present status of hematology and instruction in actual reading of slides of normal and pathological specimens of peripheral blood and bone marrow.

For further information address: Dr. Samuel Soskin, Dean, 29th St. and Ellis Ave., Chicago 16, Ill.

ANNOUNCEMENTS

P. K. Thomas, Jr., M.D., announces the opening of his office, 538 Main Street, Tupelo, Mississippi, specializing in Obstetrics and Gynecology.

STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

PREVENTABLE DISEASE CONTROL

December, 1950-April, 1951

by

A. L. Gray, M.D., Director

Acute Communicable Diseases

Poliomyelitis continued an unusually high prevalence with 44 cases being reported in 25 counties in the first four months of 1951. Harrison County, particularly the city of Biloxi, showed a rather alarming prevalence with 12 cases. These were concentrated in and around Keesler Field and involved primarily Air Force personnel and their families. It should be recalled that poliomyelitis showed the highest incidence in both 1949 and 1950 in the history of the state, with 350 cases reported in 1949 and 394 cases in 1950.

There was a widespread occurrence of epidemic proportion of influenza or influenza-like illness apparently of low fatality rate. Diphtheria showed the lowest number of cases in the period January through April of any previous corresponding period. Three cases of suspected smallpox were reported but further study proved these not to be smallpox. Brucellosis showed a significant increase over previous similar periods.

Epidemiologic Investigation and Epidemiologic Training

All reported and suspected cases of malaria, typhus, typhoid, tularemia, brucellosis, and some other diseases were investigated by the nurse epidemiologist and trainees in order to assist in establishing diagnosis and to determine sources of infection. This service was rendered in cooperation with local health department staffs and private physicians.

Five nurses from California were assigned to the Division in March for two months of field training in epidemiology under the supervision of Miss Mary E. O'Connor. The assignment was by the Communicable Disease Center of United States Public Health Service which is promoting this type of training for suitable nurses. These services have proved most helpful in investigating cases and suspects and in bolstering control of various diseases.

Tuberculosis Control

A major share of the total effort of the Tuberculosis Control Unit was directed at case finding, supervision, and education. Dr. Hans-Karl Stauss was employed in January, 1951, as a part-time consultant in chest diseases on a temporary basis to take over the responsibility of reading films for the Tuberculosis Control Unit and county health departments. This was necessary because Dr. C. C. Smith, formerly supervisor of the unit, had accepted full-time employment with the Veterans Hospital. Dr. Stauss has rendered most valuable service in this emergency in keeping the case-finding program going.

Late in December, 1950, and early in January, 1951, it was necessary for Tuberculosis Control Unit to assist county health departments in making chest x-rays of National Guardsmen subsequent to induction. This assistance was in the form of developing and reading the films at a rapid rate in order to meet the deadline for induction of these men. About 2,200 such films were developed and interpreted. Another defense emergency developed late in February, resulting in the Commander of the Mississippi Military District Induction Station calling on the State Board of Health for assistance in x-raying registrants. Until that time, this work had been done by private physicians who felt they could no longer do it. The commanding officer requested the Board of Health to place a mobile x-ray unit with an operator at the Induction Station. This was done as a temporary expedient in national defense to give the induction station time to acquire and install its own equipment. In a two months period 6,422 x-rays were made with the understanding that the army would refund the Board of Health one dollar ($1.00) per person x-rayed to defray cost of this assistance.

Routine case finding activities continued through mass and spot x-ray surveys in many areas together with visits of mobile buses to each county at four month intervals for selective x-ray service. These services have proved to be most popular with the general population, school officials, health departments and others.

Through the cooperation of the Tuberculosis Control Unit, Field Unit, and county health departments, much progress was made in delineating the tuberculosis problem in many of the county health departments by setting up local registers of cases in each county. This is a visible type register which shows from day to day at a glance essential facts about each known case and their contacts including what needs to be done with each case at any moment. This is an essential facility in guiding the total control program.

Venereal Disease Control

State-wide control activities have continued to reduce the prevalence of venereal diseases in the state. In Mississippi, as on the national scale, the trend in the number of cases of early infectious syphilis has been steadily downward for the past five years. This decrease in early syphilis is quite striking and indicates that effective progress is being made toward ultimate control.

Plans were completed and partially put in operation whereby there is joint control activity between the State Board of Health, local departments, armed force units, and the United States Public Health Service in keeping syphilis and gonorrhea under control as it relates to national defense. Of prime significance in this joint action is the assignment by the Venereal Disease Division of United States Public Health Service of men trained both in interviewing and in epidemiology of venereal diseases to be reassigned to important military units to interview military personnel having these diseases to determine their sex contacts and situations and conditions relating to exposure. These men will work in close liaison with local health departments in case finding in the civilian population and in eliminating the conditions favorable to spread.

Mississippi was selected from all of the southern states by joint decision of the United States Public Health Service and Children's Bureau in which a study is now being conducted to determine the rate of production of congenital syphilis in the newborn of the Negro population. This study is being carried on in Washington and Sunflower counties with the cooperation of the local health departments and the divisions of preventable disease control, public health nursing, and public health statistics in the State Board of Health. The study began September 1, 1950, and will continue for one year. It is being initiated from birth certificates of all resident Negro births between May 1, 1950, and May 1, 1951, in the two study counties. Special investigation is being made of all infants, and all other familial contacts, of mothers who have syphilis or who gave a history of having had syphilis. The study has two prime objectives:

1. To determine rate of production of congenital syphilis.
2. To determine medical and public health deficiencies leading to occurrence of congenital syphilis in the newborn.

Mass blood surveys for syphilis were completed or started in the following counties during the semi-annual period: Tallahatchie, Pike, Lincoln, Hinds, Amite, Lauderdale, Kemper, Wilkinson, and Jefferson counties. These surveys continue to be productive in finding previously untreated cases, relocating previously known cases needing post-treatment, evaluation, and in education. A large proportion of cases referred to rapid treatment centers and physicians are the result of the survey approach.

Of very great significance as an index of control is the precipitous decline in primary and secondary cases of syphilis being discovered. In January, February, and March, 1951 only 106 cases were discovered indicating a maximum of 350 to 400 will be discovered in 1951. In 1946 there were 4,082 cases of primary and secondary syphilis reported in the state.

Cancer Control

The demand for diagnostic and treatment assistance for indigent patients through the Mississippi Division of the American Cancer Society and State Board of Health continued to increase and is far greater than available funds from all sources will provide for. Either more funds must become available or more selectivity in accepting patients must be adopted. Private physicians operating this clinic program deserve much credit for giving of their time and skill to these patients.

Professional education continued through additional seminars for physicians. The educational sub-committee of the State Medical Association Cancer Committee is the sponsor of this program and the State Board of Health and American Cancer Society have cooperated in every possible way to make this important work successful. Seminars were held at Natchez and Gulfport during this period.

Heart Disease Control

The initiation of an active, organized heart disease control program began to take shape during this period. A beginning was made in December, 1949, when the Mississippi State Medical Association through its president appointed an advisory heart committee to cooperate with the Division of Preventable Disease Control for a program based on the need as indicated by studies of the many facets of the problem.

Dr. Thaddeus Dunin Labecki was employed November 16, 1950, as supervisor of the Heart Disease Control Unit. By virtue of his fourteen months special training in cardiovascular diseases, he will also serve as consultant in this field. Already he has rendered consultation service in over fifty instances upon request of individual physicians and groups of physicians. Over 6,000 70 mm. chest films were studied by him for evidence of heart disease, and many of those showing such evidence were thoroughly studied with private physicians to determine their actual cardiac status.

The coordinator of Health Services, Mr. H. J. Massies, continued a program of education on heart and vascular diseases among the general population, but more specifically with high schools and colleges. This work has met with favorable response, indicating that the public is much interested in this major health problem.

Professional education in regard to heart disease is deemed by the Advisory Committee of the Mississippi State Medical Association to be of prime importance. In line with this thinking, two one-day seminars for physicians have been projected and organized for June 21-22, at Gulfport and Jackson respectively. Speakers will include leading cardiologists from the University of Southern California, Tulane University School of Medicine, and our own state.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

PEDIATRICS

CHLOROMYCETIN IN THE TREATMENT OF PNEUMONIA IN INFANTS AND CHILDREN. A Preliminary Report on Thirty-Three Cases. Adrian Recinos, Jr., Sidney Ross, Bennett Olshaker and Ellsworth Twible, Children's Hospital, Washington, D. C. New England J. Med. 241: 733-37, Nov. 10, 1949.

"Chloromycetin was used in the treatment of 33 children 4 months to 12 years of age having bacterial pneumonia as diagnosed clinically and by laboratory tests. The cases were grouped as pneumococcal 18, streptococcal 1, staphylococcal 1, and unclassified 13. Chloromycetin was given orally in daily doses of from 50 to 250 mg. per kg. of body weight. Most doses were given every three hours. The total treatment period varied from two to six days. The drug was given in a capsule to older children. The best procedure for small children was to mix the drug with syrup of Santa Yerba and follow with chocolate milk.

Estimations of the therapeutic value of treatment were chiefly based upon the rapidity of return to normal of the clinical, roentgenologic and laboratory findings. Serial nasopharyngeal cultures were made of each patient, beginning on admission and continuing at the rate of 2 to 4 cultures every two days. Leukocyte counts returned to normal by the third day in 21 of the patients but the leukopenia was neither progressive nor associated with granulocytopenia. The temperature became normal within three days in 32 cases. Serial chest roentgenograms showed the inflammatory process to be appreciably resolved in four to seven days in 24 cases.

Comparison of results obtained with oral chloromycetin in 18 patients with pneumococcal pneumonia and 11 similar patients treated with aureomycin orally showed that the former received about 25 mg. per kg. larger dose but this difference was rather empirical as the optimal doses have not yet been standardized. Rapid defervescence occurred with both drugs. The temperature of aureomycin-treated patients returned to normal in an average of twenty-two and two-tenths hours and that of the chloromycetin-treated in twenty-three hours. Nasopharyngeal cultures of 61% of aureomycin-treated patients and 70% of chloromycetin-treated patients were negative after five days. Roentgen resolution averaged five and nine-tenths days for aureomycin-treated patients and five and three-tenths days for chloromycetin-treated patients. No treatment failures occurred with either drug. Nausea, vomiting and diarrhea occurred not infrequently with aureomycin and sometimes made it necessary to stop the drug. A transitory leukopenia was the only evidence of toxicity from chloromycetin and did not necessitate stopping treatment in any case.

Results obtained in this small series indicated that chloromycetin is effective treatment for bacterial pneumonia."

COMMENT: We have had a considerable amount of experience with the administration of chloromycetin with pneumonia as well as many other types of infection. It is a wonderful drug. The great disadvantage in pediatrics is the very bitter taste and children do not take it well by mouth. We use capsules per rectum frequently which has a very good effect. All in all, it is an outstanding drug.

Woman's Auxiliary

OFFICERS

President	Mrs. George W. Owen Jackson
President-Elect	Mrs. Richard Clark Hattiesburg
First Vice-President	Mrs. W. H. Anderson Booneville
Second Vice-President	Mrs. Willard Waldron Jackson
Third Vice-President	Mrs. I. C. Huggins Jackson
Recording Secretary	Mrs. C. C. Hightower Hattiesburg
Treasurer	Mrs. J. D. Simmons Cleveland
Parliamentarian	Mrs. V. B. Philpot Holly Springs
Corresponding Secretary	Mrs. P. R. Greaves Jackson

COMMITTEE CHAIRMEN

Program	Mrs. T. A. Baines Jackson
Research and Romance of Medicine	Mrs. I. J. Newton Greenville
Legislation	Mrs. J. G. Thompson Jackson
Doctor's Day	Mrs. L. J. Clark Vicksburg
Preventorium	Mrs. Henry Boswell Sanatorium
Today's Health	Mrs. S. L. Bailey Kosciusko
Nurse Recruitment	Mrs. S. B. McIlwain Pascagoula
History and Archives	Mrs. Harvey Garrison, Sr. Jackson
Revisions	Mrs. J. R. Williams Houston
Budget	Mrs. Stanley Hill Corinth
Memorial	Mrs. Joe Rogers Oxford

COUNCILORS

First District	Mrs. George Archer Greenville
Second District	Mrs. R. L. Wyatt Holly Springs
Third District	Mrs. A. E. Brown Columbus
Fourth District	Mrs. J. K. Avent Grenada
Fifth District	Mrs. H. C. Ricks Jackson
Sixth District	Mrs. Guy Vise Meridian
Seventh District	Mrs. C. R. Jenkins Laurel
Eighth District	Mrs. R. B. Zeller Hazlehurst
Ninth District	Mrs. M. M. Snelling Gulfport

NEW OFFICERS ELECTED

The above masthead reveals an abundance of talent and ability to maneuver our ship of accomplishment in the coming year. With Mrs. George W. Owen of Jackson elevated to the presidency, an excellent coordination of effort has already been undertaken. A few new committees have been formed, namely Bulletin and budget, while the first vice-president has been relieved of the duties of program planning and a new chairman heads the committee.

THE STATE MEETING

Graced by the presence of Mrs. Harold F. Wahlquist, president-elect of the Auxiliary to the American Medical Association, and Mrs. Neil Woodward, vice-president of the Auxiliary to the Southern Medical Association, both of whom brought particularly fine messages, and Mr. Hodding Carter, Greenville editor, as Doctors' Day luncheon speaker, the 1951 convention program was declared successful.

"Right in our own home communities do we need to reinterpret Americanism to the people

OUR NEW PRESIDENT

Mrs. George W. Owen
Jackson, Miss.

and live the principles of individual human freedom," declared Mrs. Wahlquist. Throughout the week she inspired each session with her presence and excellent suggestions for a more effective organization. She beautifully restated the purposes and ideals of the medical auxiliary in the installation service which she most ably conducted at the close of the meeting.

Mrs. Woodward took the group on a trip to Argentina, where she unfolded the dictatorship tactics dominating the Peron government. Her personal experiences and reminiscences gave enlightening insight into the socialist state and its stifling deprivation to the individual and institutions which function freely in a democracy.

Mr. Carter, Mississippi's foremost journalist and a man of exceedingly advanced ideas and courage to speak them, decried our lethargy toward conditions which threaten our present mode of life. He averred that we mistake eddies for the main stream when we dwell too partially on political issues such as the Truman-MacArthur controversy, and fail to see the malignancy present in our thinking and attitude. He opined that America needs first a moral purge, as evidenced by national scandals, investigations, and the trend toward laxness in athletic standards on college campuses. He further prescribed the need of a right-about-face in our relations with the millions of yellow, brown and black peoples of the earth who are as yet unallied politically, but who will likely be divided up in a final show-down of the two basic ideologies paramount today—godless communism and democracy.

MRS. CLARK ELECTED PRESIDENT-ELECT

Mrs. Richard H. Clark, Hattiesburg, was elected president-elect of the Woman's Auxiliary to the Mississippi State Medical Association at the annual meeting at Biloxi May 15-17. Mrs. Clark was president of the Woman's Auxiliary to the Southern Medical Association in 1943, presiding over the annual meeting that year held at Cincinnati. As a past president of the Southern Auxiliary, she is also a member of the executive board of the Southern Auxiliary.

A doctor's wife of extraordinary ability and accomplishment, she takes her place for elevation to the highest post in the state organization with the whole-hearted approval of the membership. She has held various active offices with enthusiastic dedication to the work, and as organization chairman the coming year stretches with promise.

A WORTHY PROJECT TO UNDERTAKE

Annually the American Physicians and Surgeons sponsors an essay contest on "Why the Private Practice of Medicine Is the Best of This Country," and the state chapter is asking the Auxiliary to assume responsibility for the project in Mississippi this coming year. Local auxiliary units are urged to offer a small prize for the best essay written in the local high schools. These winning essays will be sent to a state committee to compete for the winning essay in Mississippi. Then the winning paper will go in for competition to the national committee. The grand award is $1,000, offered by the Association of American Physicians and Surgeons. There will also be a creditable cash prize offered for the winning essay for the state.

This is a worthy undertaking and one that will serve well the purposes of auxiliary in each county. Be prepared to supply the contestants with good, authentic material!

Present Status of Treatment of Some of the Common Contagious Diseases with the Antibiotics and Sulfonamides*

SAMUEL KARELITZ, M.D.† and NATHAN SCHIFRIN, M.D.†

New York, N. Y.

IN THE last fifteen years since sulfonamides and antibiotics first became available the fear of many of the bacterial infections, whether primary or secondary, has largely disappeared. Meningococcus meningitis, formerly 20-80 per cent fatal, is now almost invariably cured. Only some of the severe cases of Waterhouse-Friedrichson syndrome succumb. Pneumococcal, streptococcal and influenzal meningitis fromerly nearly universally fatal or crippling respond to treatment. Pneumonia in infants under one year of age, formerly 20-40 per cent fatal, is now an infrequent primary cause of death. Although viral diseases as such have not been subdued, in the case of measles the mortality has dropped because the secondary infections respond to treatment; thus measles which formerly resulted in 20 per cent mortality in the first year of life and 6 per cent in the first three years is now associated with less than 1 per cent mortality.

In this presentation the antibiotic and sulfonamide treatment of several of the more common communicable diseases will be discussed. We shall not attempt to cover the entire field but will stress diphtheria, scarlet fever, measles, pertussis and influenzal meningitis and will refer briefly to few other diseases.

Diphtheria:

It is well to start with the warning that at the present time we have no antibiotic, no sulfonamide or any other preparation which can supplant diphtheria antitoxin in the treatment of acute diphtheria. Toxic complications of diphtheria occur even when the patient is cleared of bacilli by penicillin within 24-48 hours after onset of the disease. Whenever the diagnosis of diphtheria is considered to be a real possibility antitoxin should be given in adequate dosage after taking the usual precautions referable to horse serum sensitivity.

Since 1943 we have found penicillin effective for the eradication of the diphtheria bacilli from most patients with acute faucial or wound diphtheria and from diphtheria carriers.[1-5] Continued observations over the last seven years have led to the following opinion. Penicillin should be given to all patients ill with diphtheria in association with antitoxin. 300,000 to 1,000,000 units or more of aqueous procaine penicillin if given daily intramuscularly will in more than 75 per cent of the cases eradicate the bacilli within a period ranging from twelve hours to several days. The penicillin should be continued until at least three negative nose and throat cultures are obtained, and during this latter period if possible the patient should be removed from contact with patients infected with diphtheria.

Chart 2

Range of Concentrations of Nine Antibiotics Which Completely Inhibit More Than 80 Per Cent of Virulent Strains of C. Diphtheriae

Antibiotic	Minimum Complete Inhibiting Concentrations, Micrograms per Milliliter	Per Cent of Strains
Bacitracin	0.2-0.4	89
Penicillin	0.2-0.8	86
Terramycin	0.8-3.1	92
Chloromycetin	1.6-6.3	92
Neomycin	1.6-6.3	83
Aureomycin	3.1-6.3	83
Streptomycin	3.1-6.3	83
Aerosporin	100-200	92
Polymyxin	200	100

Chart reproduced through the courtesy of Dr. G. G. Jackson, J. of Ped. 37: 718, 1950; and Dr. Borden Veeder, editor, Journal of Pediatrics.

Some strains of Corynebacterium diphtheriae are more resistant to penicillin. Doses in excess of 1,000,000 units daily may be required and even these may prove to be ineffective. Buxbaum[6] and her associates found a variation in resistance from $\frac{1}{4}$ unit to over 10 units per cc. in some 385 strains studied at the Willard Parker Hospital. Others have noted resistant strains in patients receiving as much as 2,000,000 units daily. In such cases tonsillectomy is usually effective.

---

†From the Willard Parker Hospital and the Department of Pediatrics, Mount Sinai Hospital, N. Y.

*Read before the sixty-second annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 13-15, 1951.

Penicillin administered locally as nose drops or in nasal or oral aerosol and penicillin troches may be effective in carriers but we have found the combination of parenteral penicillin therapy and lozenges or nose drops to yield the quickest and most gratifying results.[2]

Aureomycin 25 mgms/.kilo., later 50 and 100 mgms./kilo. per day has been tried by Karelitz, King and Rubenstein[7] in 24 carriers and active cases of faucial diphtheria. The results were astonishingly good in the first ten cases. Since then the results have been favorable in acute diphtheria but less striking in the chronic carriers. All of the carriers had tonsils. Aureomycin, 50 mgms./kilo. per day should be tried in cases of diphtheria which do not respond to penicillin or in patients sensitive to penicillin.

We have observed one patient with diphtheritic otitis media and faucial diphtheria whose pharynx and right ear were also infected with the Friedlander bacillus. Neither organism was eliminated by the daily injection of 900,000 units of aqueous procaine penicillin nor by aureomycin given up to 100 mgms./kilo. daily nor by both drugs given concurrently. Both organisms were eliminated within 3 days after streptomycin therapy was started. In vitro studies[8, 9] reveal susceptibility of C. diphtheriae to streptomycin but clinical evidence of its use is still scant.

Sensitivity studies reported by Jackson[8] et al, with penicillin, aureomycin, polymixin, streptomycin, chloromycetin and terramycin have shown them all to be effective against C. diphtheriae, but penicillin, terramycin and aureomycin were found to be the most effective of the non-toxic antibiotics.

In summary we have found penicillin and to a lesser degree aureomycin effective in the treatment of acute faucial diphtheria and diphtheria carriers. These antibiotics in combination with antitoxin are the choice therapeutic agents for acute diphtheria, and these antibiotics alone are probably the most effective antibiotics for the suppurative bacteria, e.g. streptococcus, staphylococcus, and pneumococcus.

Scarlet Fever. Scarlet fever, like other infections produced by hemolytic streptococci, responds favorably to penicillin, aureomycin and the sulfonamides.[10, 11, 12, 13] There have been many controlled studies of the comparative efficacy of penicillin and sulfadiazine on scarlet fever, also of each alone or together as compared to the effects of gamma globulin, convalescent serum or scarlet fever antitoxin.[14, 15a, 15b] The results of most of these studies may be summarized as follows: Penicillin is the drug of choice in the treatment of scarlet fever. Daily intramuscular injections of 300,000 units of aqueous procaine penicillin or multiple daily doses given orally,[16] for example 150,000 units of a buffered preparation given every six to eight hours or three or four times a day for ten days produced the following results. The rash does not seem to be influenced much if at all. It does not fade much sooner than in the untreated cases, nor does it disappear as rapidly in patients treated with penicillin or sulfa as it does after treatment with gamma globulin or convalescent serum or after scarlet fever antitoxin. Otherwise penicillin seems more effective than the antitoxic products. In the penicillin-treated groups the temperature becomes normal in about 90 per cent within three days. The suppurative focus may require more than ten days of therapy and possibly larger doses of penicillin than 300,000 units daily. The upper respiratory tract is cleared of beta hemolytic streptococci in 24-48 hours in most penicillin treated patients and recurrences of the streptococci is much less frequent if treatment is continued for ten days and if contact with carriers of the streptococcus is eliminated.[14] Recurrent scarlet fever rarely occurs after penicillin treatment. Non-suppurative diseases like rheumatic fever and nephritis are sharply reduced.[17, 18, 19] We have had excellent clinical results in children with uncomplicated scarlet fever with daily intramuscular injections of 300,000 units of aqueous procaine penicillin for three days followed by the same amount every other day for three or four doses.

Effect of Penicillin on Scarlet Fever

1. Sore throat is relieved earlier.
2. Rash is unchanged, or only slightly effected.
3. Temperature returns to normal within 3 days in over 60% of patients.
4. Otitis media, cervical adenitis and sinusitis are prevented in most cases.
5. Incidence of rheumatic fever is reduced.
6. Incidence of nephritis is reduced.
7. Carriers of hemolytic streptococcus reduced and recurrent scarlet fever practically eliminated.

Chart 3.
Complications Observed Before and After Treatment

Type	Aureomycin		Penicillin		Untreated
	Before	After	Before	After	
Otitis media	2	0	1	1	5
Pneumonia	0	0	0	0	3
Croup	2	0	0	0	1
Tonsillitis	0	0	1	0	1
Purulent conjunctivitis	1	0	0	0	0
	11%	0%	4.6%	2.3%	23.2%

In one army camp of a group of 1,650 cases of streptococcus infections half of them were treated with penicillin and half served as controls only two instances of rheumatic fever being observed in the treated group, while in the untreated group seventeen patients developed rheumatic fever.[18] This is statistically significant and indicates the need for early treatment of hemolytic streptococci infection.

For the past five years it has been the custom of one of us (SK) to give sibling and adult contacts of scarlet fever 1 and 2 grams respectively of sulfadiazine daily for seven to ten days. No secondary cases of scarlet fever or sore throat occurred, whereas severe sore throat and tonsillitis was quite common and occasionally scarlet fever with a rash in the adult contact before this prophylaxis was employed. During World War II several epidemics of streptococcal infection were arrested by this form of prophylaxis.[20]

Mumps. Neither mumps nor its most common complications, orchitis or meningitis, seem to respond to any of the known sulfonamides or antibiotics. However, in cases of complicating suppurative parotitis and other purulent complications both the sulfonamides and antibiotics are effective depending on the bacteria present.

Chicken Pox. Mazursky,[21] et al., found no benefit from aureomycin given to forty-one cases of chicken pox. Both the antibiotics and sulfonamides given locally and/or parenterally are useful in secondarily infected chicken pox, and the complications like impetigo, erysipelas, etc.

German Measles. The disease is usually so mild that none of the antibiotics or sulfonamides are indicated except in the relatively uncommon complications.

Measles. As in most of the other virus diseases there is no convincing evidence that the virus or allergic phase of measles is altered by the antibiotics or sulfonamides. Drowling Ross[22] and Drake Cummings[23] have respectively reported favorable results in nine and twelve cases of measles treated with aureomycin. In a controlled study, King, Curtis and Karelitz[24] treated 45 children with measles in the pre-eruptive or early eruptive phase with 300,000 units of aqueous procaine penicillin intramuscularly daily for four days. Forty-three such cases were treated with 50 mgms./kilo. per 24 hours of aureomycin divided into four equal six hourly doses, for four days and 44 cases were observed without therapy. The results were as follows: The appearance, intensity and distribution and duration of the rash were not altered by treatment with either penicillin or aureomycin. The cough seemed unchanged except in those with pulmonary complications in which it improved. The coryza and photophobia were not influenced. The two striking differences between the treated and control group were in the duration of fever and incidence of complications. The temperature of the penicillin-treated group averaged 2.8 days, of the aureomycin-treated group 2.2 days and in the untreated controls 4.2 days after the rash first appeared. The complications were 23 per cent in the control group, in the penicillin group 4.6 per cent before treatment and 2.3 per cent after treatment and in the aureomycin treated group 11 per cent before treatment was started and none after treatment. In sporadic cases of pre-eruptive measles, we have used sulfonamides with similar success in preventing suppurative complications. These experiences have led us to the conclusion that in those parts of the world where measles is frequently complicated by pneumonia, otitis media and other suppurative infections, either penicillin, aureomycin and or possibly sulfadiazine should be given throughout the course of measles. This is most important in infants. Kohn and Koiransky[25] demonstrated pulmonary infiltration in measles in the pre-eruptive and eruptive phase in about 62 per cent of children under four years of age. In all probabilities it is these and other subclinical infections due to the pyogenic bacteria which by treatment results in earlier drop of temperature.

Pneumococcus Meningitis. The simultaneous administration of sulfadiazine and penicillin in liberal doses, intravenously and by mouth or by both routes is the treatment of choice.[26, 27] Rarely is intrathecal penicillin indicated,[27] but there is little risk in one or two daily injections of 10,000-50,000 units diluted in 10 cc. of physiological salt solution if the disease is very severe or not progressing well with oral and intravenous therapy alone. Treatment may be stopped five to seven days after the temperature is normal, the spinal fluid is clear of bacteria and the spinal fluid sugar is 50 or more. Survival has been attained in over 80 per cent but complete recovery without sequelae is less frequent.

Aureomycin, chloromycetin and terramycin are effective in pneumococcus pneumonia, but experience with these drugs in pneumococcal meningitis is scant.

Meningococcemia and Meningitis. In meningococcemia alone or with meningococcus meningitis best results are reported with sulfadiazine.[28] Approximately 1½ grains per pound or 0.1 gm. per pound are given by mouth or parenterally as warranted by the patient's condition. This is continued until three days after the temperature and spinal fluid are normal. Penicillin or aureomycin are also effective. Penicillin added to sulfa does not seem to yield better results than does sulfadiazine alone.

In the acute fulminating form, the Waterhouse-Friedrichson syndrome, large doses of penicillin and sulfadiazine and either adrenal cortical extracts like eschatin or cortisone are urgently needed. In a recent case, a 10-year-old girl with meningococcemia who was pulseless and in shock, 60 cc. of eschatin (adrenal cortical extract) helped only slightly. Cortisone 100 mgms. given three times within 24 hours seemed to help somewhat more. A second child with the same disease also seemed to improve with cortisone. Further experience may indicate that cortisone is preferable to eschatin.

Contacts of meningococcus infected patients such as nurses, family contacts, and dormitory roommates are often infected. In some army barracks as many as 80 per cent of the contacts were infected; 1-2 grams of sulfadiazine daily rapidly eliminated most of these carriers.[29]

Streptococcus Meningitis. Penicillin and sulfadiazine alone or together are still the drugs of choice and should be given intravenously and by mouth in liberal doses until seven to ten days after the fever becomes normal and the spinal fluid is free of bacteria and is otherwise normal.

Influenzal Meningitis. Treatment of this disease has passed through several interesting phases. Sulfadiazine alone cannot be expected to yield good results in many.[30, 31, 32] Streptomycin, 25 mgms./lb. or 50 per kilo given in divided six hourly intramuscular injections given for five or six days alone or with sulfadiazine is usually effective. In more resistant cases, 25 mgms. of streptomycin given intrathecally daily for one or two days may be helpful.[33, 34, 35, 36a, 36b, 37] Sulfadiazine if included should be given in dosage adequate to attain a blood level of 10-12 mgms. per cent. Usually about 3 grains or 0.2 gms. per kilo. per day suffice. Aureomycin is also effective against H. influenzae and several cases have been treated successfully with aureomycin alone or with sulfadiazine by Chandler and Hodes.[38]

Our personal experience with aureomycin in influenza meningitis is quite limited. One three-year-old patient was given 50 mgms. per kilo. four times a day by mouth or a total of 200 mgms. per kilo. per day. In addition he was given 500 mgms. intravenously twice on the first and once on the second day of admission. The oral aureomycin was continued for five days after the temperature became normal and the spinal fluid culture was sterile. This child did very well. Recovery seemed complete. A second child with moderate disease, age three years, was given 200 mgms. of aureomycin intravenously twice on the first day and once on the second day. The oral dosage was 25 mgms./kilo. in each of four doses daily at six-hour intervals or 100 mgms./kilo. per 24 hours. The child improved rapidly but complained of headaches for the first five days. The temperature dropped by lysis in six days. Treatment was continued for eight days after the temperature remained at 100° F. or less, yet two days after therapy was stopped the spinal fluid cell count rose from 15 to 500 per mm. and a culture was again positive for Hemophilus influenza B. Streptomycin 1 gm. daily was therefore substituted for the aureomycin with a rapid recovery. Further experience raises doubt as to the advisability of treating patients with influenzal meningitis with aureomycin alone.

Chloromycetin, 200 mgms./kilo. per 24 hours given by gavage in four to six hourly doses of 50 mgms./kilo. seems to have become the treatment of choice of many. M. Smith[39] and her co-workers have treated 50 children with recovery in 49. They used chloromycetin alone.

If one is studying the efficacy of one or another antibiotic, in the treatment of H. influenzae meningitis it may be justifiable to try for example large doses of aureomycin by vein and by mouth, or chloromycetin or streptomycin alone. Otherwise even the limited available data suggest that it would seem safer to use a combination of either chloromycetin and sulfadiazine or streptomycin and sulfadiazine. Possibly a combination of streptomycin and chloromycetin may prove more effective. Specific anti-influenzal serum seems unnecessary in most patients.

Pertussis. Aureomycin has been variously reported to be effective and to be ineffective in pertussis. Bradford and Day,[40] and Alexander,[41] et al., and Wells[42], et al., have demonstrated its in vitro effect while Bell[43], et al., have described rapid elimination of H. pertussis and reducing the period of paroxysms in children with pertussis. One of us (S. K.) has treated 12 children with pertussis with 50-60 mgms. of aureomycin per kilo. per 24 hours and observed that in eight of these twelve, striking reduction in the frequency and severity of the paroxysms and vomiting was accomplished in 48-72 hours. Two children had recurrence three and four days after discontinuing the drug and further improvement when aureomycin was resumed. The successes were characterized by a milder and shortened course of the disease.

Streptomycin has been found effective in pertussis by Gordon and Almadon[46] especially in infants complicated by pneumonia, but others have been unable to duplicate these results. At the Willard Parker Hospital streptomycin given both as an aerosol and intramuscularly seemed to help younger babies but the overall results were not decisive.[44, 45] Polymixin and aerosporin have also had their proponents and antagonists.[47, 48] The beneficial results do not outweigh the nephrotoxic effect. Chloromycetin is believed by many to be effective and the drug of choice, but here too the results vary and are not always good. Macrae[49] gave 250 mgm. followed by 125 mgm. every six hours for seven days and found improvement in 12 hours in four and in 24 hours in one. Gray[50] recommended the following doses of chloromycetin according to the age

up to 1 yr. 100 mgm. per kilo, then 60 mgm. q. 3 h.
less than 3 yr. 100 mgm. per kilo. then 125 mgm. q. 3 h.
more than 3 yr. 100 mgm. per kilo. then 250 mgm. q. 3 h.

These dosages were given for five days and he claimed good results.

The drugs of choice are chloromycetin and aureomycin but both should be given in large doses, 50-100 mgms. per kilo. per day and continued as long as it takes to get a good therapeutic response. More recently terramycin has also found its proponents in the treatment of pertussis.[51, 52, 53]

Although this paper does not deal with the various immune sera, it must be added that pertussis immune convalescent serum, gamma globulin made from hyperimmune serum and rabbit antipertussis serum are considered to be the most effective preparations, possibly more effective than any of the antibiotics. Combination therapy of one of the antibiotics and one of the immune sera is probably the most effective available therapy for whooping cough.

Typhoid Fever. In typhoid fever and in typhoid carriers chloromycetin is the drug generally found most effective, 50 mgms. per kilo. given as the first dose, followed by 250 mgms. every three hours for 7-10 days after the temperature becomes normal.[54-56] Relapses occur but many of them respond to additional chloromycetin. While chloromycetin reduces the incidence of carriers, it is now evident that some carriers do not clear up under antibiotic therapy alone.

Tuberculous Meningitis. The reported results of the treatment of tuberculous meningitis[57-62] are increasingly optimistic. Recovery of better than 50 per cent of the patients treated is the rule wherever intensive therapy including streptomycin intramuscularly and intrathecally, promizole or a similar drug and para-aminisalicylic acid are employed simultaneously. Those with the greatest experience in the management of tuberculosis meningitis stress the need for long lasting, protracted, and uninterrupted therapy.

Streptomycin is given intramuscularly in dosage of 20-50 milligrams per kilo. of body weight per day. 1½ to 2 grams divided into two to four injections is the maximum daily dose given to any patient. This is continued for six, nine, or twelve months or longer. The duration of treatment is dependent on the time it takes for the disappearance of all evidence of active infection in the central nervous system, for the temperature to be normal, the cerebrospinal fluid to be normal, and for the electroencephalogram to become normal or to remain unchanged for several tracings. This usually implies intramuscular treatment for at least two months after the cerebrospinal fluid has become normal.

Streptomycin is given intrathecally in dosage of 20-50 milligrams depending on the size of the patient. For the first eight to ten days two intrathecal injections are given by some, but one daily instillation is more commonly employed. These injections are continued daily for 30-60 days then once every two days for as long as it takes the cerebrospinal fluid to become normal and for two weeks thereafter.

When promizole or some equivalent drug is given along with streptomycin the results are said to be better than with streptomycin alone. (Promizole when given for some time may stimulate breast and thyroid enlargement and the growth of pubic hair.) The drug is given by mouth in dosage of 100 milligrams per kilo. of body weight per day.

Para-aminisalicylic acid (PAS) has been found to reduce the development of resistance of the tubercle bacillus to streptomycin. It is given in dosage of 0.3-0.5 gms. per kilo. per day, by mouth divided into four to six doses and is continued for three to four consecutive days after which it is omitted for one or two days. This cycle is resumed throughout the course of streptomycin therapy.

The intrathecal introduction of tuberculin has been recommended by Dr. Honor Smith and Dr. Vollum. They have observed improvement in patients who did not progress well on other forms of therapy especially in patients with tuberculin anergy. It is too early to judge the results of this addition to the treatment outlined above. If one wishes to add tuberculin to the combined form of therapy already outlined, it would be preferable to refer to the publication of Dr. Smith and Dr. Vollum.[58]

BIBLIOGRAPHY

1. Karelitz, S., Wasserman, L. R., and Moloshok, R. E., Penicillin in the Treatment of Diphtheria and Diphtheria Carriers, J. Ped., 30: 18, 1947.
2. Karelitz, S., and Spinelli, V. A., Penicillin Treatment of Diphtheria Carriers, Ped., 3: 639, 1950.
3. Weinstein, L., The Treatment of Acute Diphtheria and the Chronic Carrier State with Penicillin, Am. J. Med. Sci., 213: 308, 1947.
4. Long, D. A., Penicillin in the Treatment of Dipththeria, Brit. M. J., 1: 884, 1947.
5. Crawford, J. D., Penicillin in the Treatment of Diphtheria and the Diphtheria Carrier State, N. Eng. J. Med., 239: 220, 1948.
6. Buxbaum, L., Neuner, N., Dolgopol, V. B., Penicillin and Sulfadiazine Sensitivity of 385 Strains of Diphtheriae, J. Bact., 53: 507, 1947.
7. Karelitz, S., King, H. and Rubinstein, I., to be published.
8. Jackson, G. G., Chang, S., Place, E. H., and Finland, M., Sensitivity of Diphtheria Bacilli and Related Organisms to Nine Antibiotics, J. Ped., 37: 716, 1950.
9. Pulaski, E. J., Sprinz, H., and Heist, C. E., Ehrhorn, H. B., Streptomycin in Surgical Infections, Ann. Surg., 125: 194, 1947.
10. Benn, E. C., Sulphanilamide in the Treatment of Scarlet Fever, Brit. M. J., 2: 644, 1939.
11. Gordon, M. B., Solomon, N. H., Pearlman, S. F., The Value of Sulfanilamide and Sacrlet Fever Antitoxin in the Treatment of Scarlet Fever, J. Ped., 19: 76, 1941.
12. Lamotte, M., Plas, F., and Hofner, J., Results Obtained During Treatment of Malignant Forms of Scarlet Fever with Penicillin, Paris Med., 36: 511-512, 1946.
13. Justin, L., Besancon, Klotz, H. P., Suquet, Results in Cases Treated with Penicillin. Semaine d. Hop. Paris, 23: 47, 1947.
14. Weinstein, L. Potsubay, S., A Comparison of Symptomatic Treatment, Gamma Globulin, and Penicillin in the Treatment of Scarlet Fever, J. Fever, J. Ped. 37: 291, 1950.
15a. Landon, J. F., and Jackson, S. J., Treatment of Scarlet Fever, Comparison of Gamma Globulin with other Therapeutic Agents in 1667 cases. Am. J. Dis. Child., 76: 60-72, 1948.
15b. Landon, J. F. and Greenfield, N. Occurrence of Complications in Scarlet Fever Treated with Penicillin, Antitoxin and Gamma Globulin. Am. J. Dis. Child., 76: 380-383, 1948.
16. Weinstein, L., and Perrin, T. S., The Treatment Scarlet Fever with Penicillin G. Administered Orally Three Times a Day, J. Ped., 37: 844, 1950.
17. Weinstein, L., Pacrach, L., Boyer, N. H. Observations on the Development of Rheumatic Fever and Glomerulonephritis in Cases of Scarlet Fever Treated with Penicillin. N. Eng. J. Med., 242: 1002, 1950.
18. Denny, F. W., Wannamaker, L. W., Brink, W. R., Rammelkamp, C. H., Custer, E. A., The Prevention of Rheumatic Fever by Treatment of the Preceding Streptococcic Infection, J. A. M. A., 143: 151, 1950.
19. Bernard, R., and Rayband, P., Rheumatism in the Course of Scarlet Fever, Pediatrics, 36: 467, 1947.
20. Watson, R. F., Schwentker, F., Fetherston, J. E., Rothbard, S., Sulfadiazine Prophylaxis in an Epidemic of Scarlet Fever, J. A. M. A., 122: 730, 1943.
21. Mazursky, M. M., Wright, L., Weiehsel, M., Clinical Observations on the Use of Aureomycin in Varicella, Ped., 5: 276, 1950.
22. Dowling, H. F., Lepper, M. H., Caldwell, R. E., Jr., Whelton, R. L., and Sweet, L. K., Aureomycin in Various Infections. Report of One Hundred Eighty Cases and Review of the Clinical Literature, M. Ann. District of Columbia, 18: 335, 1949.
23. Drake, M. E., Imburg, J., Bradley, J. E., The Use of Aureomycin in the Treatment of Rubeola, Bull. School Med. Univ. Maryland, 34: 89, (Oct.) 1949.
24. Karelitz, S., King, H., Curtis, B. and Weichsel, M., Use of Aureomycin and Penicillin in the Treatment of Rubeola, Ped. 7: 193, 1951.

25. Kohn, J. L. and Koiransky, H. Successive Roentgenograms of the Chest of Children During Measles, Am. J. Dis. Child., 38: 258, 1929.
26. Applebaum, E., Nelson, J., Albin, MB., The Treatment of Pneumococcic Meningitis with Penicillin, Am. J. Med. Sci., 218: 260, 1949.
27. Lowrey, G. H., and Quilligan, J. J. Jr., The Treatment of Pneumococcal Meningitis Without Intrathecal Penicillin, J. Ped., 33: 336, 1948.
28. Hoyne, A. L., Brown, R. H., 727 Meningococcic Cases: An Analysis, Ann. Int. Med., 28: 248, 1948.
29. Kuhns, D. M., Nelson, C. T., Feldman, H. A., Kuhn, L. R., The Prophylactic Value of Sulfadiazine in the Control of Meningococcic Meningitis. J. A. M. A., 123: 335, 1943.
30. Sako, W., Stewart, C. A., Fleet, J., Treatment of Influenzal Meningitis with Sulfadiazine, J. Ped., 25: 114, 1944.
31. Didier, R., Influenzal Meningitis, Therapeutic Study with Special Reference to Sulfonamides and Penicillin, Bull. et. mem. Soc., med. d. hop de Paris, 63: 248, 1947.
32. Martin, R., Surean, B., Millet, A., Sulfonamide and Penicillin in the Therapeutic of Influenzal Meningitis, Arch. franc., pediat. 4: 173, 1947.
33. Mampolsky, J., and Jones, J. P., Present Treatment of Influenzal Meningitis, Am. J. Dis. Child., 78: 97, 1949.
34. Birmingham, J. R., Kaye, R., Smith, M. H. D., Streptomycin in the Treatment of Influenzal Meningitis, J. Ped., 29: 1, 1946.
35. Nussbaum, S., Goodman, S., Robinson, C., Ray, L., Influenzal Meningitis: Report of 3 Cases Treated with Streptomycin and Sulfadiazine. J. Ped., 29: 14, 1946.
36a. Alexander, H. E., and Ludy, G. H. Influenzae Infection in Children, Conn. M. J., 13: 713-721, 1949.
36b. Alexander, H. E., Ludy, G., Rake, G., and Domonick, R., H. Influenzae Meningitis Treated with Streptomycin. J. A. M. A., 132: 434-440, 1946.
37. Crook, W. G., Clanton, R. R., Hodes, H. L., Hemophilus Influenzae Meningitis: Observations on the Treatment of 110 Cases, Ped., 4: 643, 1949.
38. Chandler, C. A., Hodes, H. L., Aureomycin in the Treatment of Experimental and Clinical Infections with H. Influenza, Type B, Ped. 5: 267, 1950.
39. Smith, M., Personal Communication.
40. Bradford, W. L., and Day, E., The Action of Aureomycin, Polymyxin B, and of Streptomycin in Experimental Murine Pertussis, J. Ped., 35: 330, 1950.
41. Alexander, H. E., Leidy, G., Redman, W., Comparison of the Action of Streptomycin, Polymyxin B, Aureomycin, and Chloromycetin on H. pertussis, H. Para-pertussis, H. Influenzae, and Five Enteric Strains of Gram Negative Bacilli, J. of Clin. Inv. 28: 867, 1949.
42. Wells, E. B., Chang, S., Jackson, G. G., Finland, M., Antibiotic Spectrum of Hempohilus pertussis, J. Ped. 36: 752, 1950.
43. Bell, J. A., Pitman, M., and Olson, B. J., Pertussis and Aureomycin, Pub. Health Rep. 64: 589, 1949.
44. Wanamaker, L. W., John, J. L., and Weichsel, M. Streptomycin in the Treatment of Whooping Cough, Am. J. Dis. Child., 78: 201, 1949.
45. Shepard, K. S., Kohn, J. L., Kaplan, S. R., Allen, J. C., Further Studies on the Use of Streptomycin in the Treatment of Whooping Cough, Am. J. Dis. Child. 78: 212, 1948.
46. Gordon, V. H., and Almadon, P. J., Streptomycin Treatment for Pertussis, J. Ped., 34: 279, 1949.
47. Swift, P. N., Treatment of Pertussis with Aerospirin. Lancet, 1: 133, 1948.
48. Kaplan, S., Fischer, A. E., Kohn, J. L., Treatment of Pertussis with Polymyxin B (Aerosporin). J. Ped., 35: 49, 1949.
49. Macrae, J., Chloramphenicol in Whooping Cough: Report on 5 Severe Cases, Lancet, 1: 400, 1950.
50. Gray, J. D., Observations on Chloramphenicol, Lancet, 1: 150, 1950.
51. Jackson, G. G., Chang, Shib-Man, Barnes, M. W., and Finland, M., Terramycin in Pertussis: Clinical and Laboratory Studies, Ann. New York Acad. Sc., 53: 422, 1950.
52. Finland, M. and others, Clinical Studies on Terramycin. Ann. N. Y. Acad. Sc., 53: 290, 1950.
53. King, E. Q., and others, Clinical Observations on the Use of Terramycin Hydrochloride, J. A. M. A., 143: 1, 1950.
54. Woodward, Jr. E., Smadel, J. E., Ley, H. L., Jr., Green, R., Mankikar, D. S., Preliminary Report on the Beneficial Effect of Chloromycetin in the Treatment of Typhoid Fever: Ann. Int. Med., 29: 131, 1948.
55. Stiller, R., Typhoid Fever Treated with Chloromycetin, J. Ped. 35: 85, 1949.
56. Reilley, W. A., and Harrel, J. A., Typhoid Fever in Fourteen Children Treated with Chloramphenicol, J. Ped., 36: 440, 1950.
57. Debre, R., Brissaud, H. E., Mozziconacci, P., Cousin, M. and Kaplan, A. Causes des Echecs Observes Dans le raitement de la Meningite Tuberculeuse de l'enfant par la Streptomycine, Archives Francaise de Pediatrie, Tome VI, No. 5, 1949.
58. Smith, H. V. and Vollum R. L. Effects of Intrathecal Tuberculin and Streptomycin in Tuberculous Meningitis. Lancet, 275: Aug. 1950.
59. Streptomycin Treatment of Acute Tuberculosis in Children, A Report of the Meeting of Experts organized by UNICEF and WHO. Published by the International Children's Centre, 2 Bis, Avenue du Parc de Passy 16e) Paris, France.
60. Cocchi, C. and Pasquinucci, G.: Cited in Streptomycin Treatment of Tuberculous M. Meningitis, Lancet 1: 582, 1948.
61. Lincoln, E. M., Kirmse, T. W., and Vite, E. D., Tuberculous Meningitis in Children: A Preliminary Report of its Treatment with Streptomycin and "Promizole," J.A.M.A., 136: 593, 1948.
62. Su, T. F., and Wu, M. Y., Streptomycin and Promizole Combined Therapy in Tuberculous Meningitis in Children: J. Ped. 36: 295, 1950.

888 Park Avenue
New York 21, N. Y.

As shrubs which are cut down with the morning dew upon them do for a long time retain their fragrance, so the good actions of a wise man perfume his mind, and leave a rich scent behind them.—Plutarch.

Cerebral Dysrhythmia Associated with Childhood Behaviour—A Clinical Report*

DICK C. McCOOL, M.D.
and
MARION E. ROARK
Memphis, Tennessee

THE PURPOSE of this paper is to present our clinical experience with twenty-five cases of behaviour disorders in children on whom electroencephalographic studies have been made. It will include a discussion of electroencephalographic findings, also a discussion of treatment and its result, both clinical and electroencephalographic. For our purpose we have considered as a behaviour disorder any child, except a frank epileptic, whose symptoms render that child unmanageable, which prevent or delay normal social development, or which are specifically antisocial in character. Such symptoms included abnormal restlessness, emotional lability, insomnia, enuresis, obsessive fear and anxiety, compulsive behaviour, refusal to go to school, lack of progress in school, temper tantrums, defiance of discipline, lying, destructiveness, stealing, fire-setting, et cetera. In other words, any child whose behaviour has been such that he could not be managed successfully at home or anywhere else, has been included in our series. As you will presently perceive, these observations are offered not as a research project, but simply as a clinical report.

Literature on this subject and closely related ones, is surprisingly abundant, dating essentially from 1939 to the present time. An excellent paper on this subject by Cattell and Pacella, in the July issue of the American Journal of Psychiatry, did not discuss treatment, but dealt with the correlation of EEG patterns with behaviour disorders, and with the clinical and theoretical significance of their findings. A review of the literature reveals considerable variations in method and techniques of encephalography. It also points up the absence of standards for clinical evaluation and classification of behaviour problems. Despite methods and approaches and techniques used, it is interesting to note that there was virtually unanimous agreement that a majority of behaviour disorders were accompanied by cerebral dysrhythmia too great in percentage, and too consistent in occurrence, to be dismissed as coincidence. All the authors were justifiably cautious in speculating as to causal relationships between the two.

Our material consists of twenty-five children with varying kinds and degrees of behaviour difficulties, no effort being made to select or group them. Clinically there is only one broad common factor, namely, abnormal behaviour, which we believe to be epileptoid in character, if we may borrow Jasper's term. Family backgrounds vary. In some heredity would appear significant with respect to psychiatric disease, and to epilepsy; in others, unhealthy environmental factors seemed dynamic; in yet a third group both heredity and environment were apparently healthy. There were those with obvious emotional conflicts, and there were also those in whom no emotional conflicts could be found. All of these children have been treated, but relatively few have been successfully followed and rechecked, prior to the draft of this paper. It is only fair to point out, however, that getting private patients to come back for re-examination, and to give a report, or in most instances even getting a written report on a patient, is quite a difficult problem. For this reason evaluation of treatment has been disappointing.

The clinical procedure consisted of an interview with the parent or surrogate, interview with the patient, examination by the family physician or pediatrician, neurological study, electroencephalography, psychological tests, treatment, and satisfactory follow-up in a few instances. As a rule, a reasonably adequate history was obtainable, in which one could often glean useful impressions as to personalities in the home environment. Interviewing the children varied in satisfaction in direct ratio to their ability and willingness to cooperate, and in each instance some worthwhile information was obtained. As most of the patients were referred by general physicians or pediatricians, findings of the referring physicians were accepted regarding physical status, unless these reports were not deemed adequate in scope. In the instance of the non-referred patients, pediatric study was done. Neurological study was often impossible, though such was performed to the extent consonant with the cooperation obtained. X-ray examinations and psychological testing were not routine procedures, but were performed when they were considered indicated. Electroencephalography was performed in each case at least once. Drug therapy was prescribed with a view toward stabilizing cerebral dysrhythmia and quieting physical restlessness, if present.

Procedure in electroencephalography was as follows:

Standard methods for obtaining valid electroencephalograms were employed. An Offner Type C 144 channel crystograph electroencephalograph was used to make the records. Waking records were obtained on all patients. Eight scalp electrodes were used as follows: two frontals, two parietals, two temporals, and two occipitals. An "indifferent" electrode was placed on each ear and both scalp to scalp and scalp to ear tracings were made. In each case runs were made using the interconnected ear electrodes as a reference point. Triangulation techniques were employed on both sides as follows: frontal to parietal, parietal to occipital, occipital to temporal, and temporal to frontal.

The age of a child was carefully considered in interpreting records in order to differentiate waves in the slow frequency range considered abnormal, from those which are normal for children of various ages. The standard or normal frequencies prepared by Bernhard and Skoglund were used for this purpose.

Each record was run for a period of twenty minutes and then a two minute period of overventilation was carried out which produced latent abnormality in many cases.

In twenty-one cases the electroencephalogram showed a generalized cortical dysrhythmia, and in two cases focal abnormalities. One record was borderline normal and one essentially negative. Instability of the electroencephalographic pattern, bursts of high voltage slow waves, and mixed frequency pattern with irregular amplitude were the chief abnormalities. Many records in the unstable classification showed high voltage alpha patterns with irregular isolated sharp waves over the occipital areas. Eight cases were studied two to three times within a period of one year; with and without the employment of anti-convulsant medication. The clinical response to medication was greater than the improvement in the electroencephalogram. No direct correlation could be made between the electroencephalographic pattern and type of behaviour disorder, but the fact that 90 per cent of the cases were found to have abnormal electroencephalograms suggests actual disturbance of cerebral function as a basis for the behaviour disorder.

Therapy consisted of: (1) correction or modification of organic disease, if possible; (2) correction or modification of environmental factors; (3) psychotherapy to a limited extent; (4) drugs, both specifically antiepileptic, and sedative. If some physical disease was discovered the child was returned for treatment to the referring physician. Environment was manipulated to a degree consistent with cooperation available and the material circumstances. Parents or surrogates were talked to and advised, and requested to report changes in behaviour, good or bad. Psychotherapy was extremely limited in application due to inability to spend sufficient time with each case, due to inaccessibility in some instances, because of age, or retarded intellectual development, and due also to no particular skill or facility on my part in establishing rapport with small fry. For all practical purposes, psychotherapy played an insignificant role in this series of patients. Drug therapy was directed primarily toward altering behaviour by correcting or modifying the cerebral dysrhythmia, and secondarily, toward altering the restlessness which so frequently appeared. Medications used primarily were sodium dilantin and elixir of phenobarbital, the former as the first choice, the latter being used only in those instances in which capsules could not be swallowed, or in which extreme restlessness appeared to complicate matters. Lindsley and Henry, in the 1942 Journal of Psychosomatic Medicine, published an article on the effect of drugs on the behaviour, and electroencephalograms of problem children, in which they concluded that benzedrine sulfate first, and sodium dilantin next, were drugs of choice, and that phenobarbital frequently worsened the behaviour problem. Charles Bradley, in Pediatrics, Vol. 5, 1950, reported a comparative study of the effects of benzedrine sulfate and dexedrine upon the behaviour of some 400 maladjusted children. He concluded that the two were for practical purposes equally effective, and that they influenced behaviour by altering the children's emotional response to distressing situations. This article is highly commended for your study. As benzedrine was not used in our series of cases, we are not in a position to speak about its efficacy, but we can agree that phenobarbital alone is not the drug of choice, though it does appear to have synergistic value in the management of extreme restlessness and insomnia, uncontrolled by dilantin.

In order to check results all patients were requested to return for EEG, and to report results of medication. Unfortunately only eight patients returned for recheck. In each instance the cerebral dysrhythmia was, for practical purposes, unchanged. Five (5) of the eight patients were continuing on medication and were said to be improving either slightly or remarkably. Three were not on medication, two stating that they could notice no effect of medication and therefore discontinued it, and one had improved so much in the past year that the parents decided to discontinue treatment. Some reports have been obtained on patients who were not returned for EEG, and a majority of these reports indicate that treatment seemed to help considerably, though some have abandoned it even though it appeared to be helping.

Despite our failure to arrive at any satisfactory evaluation of treatment, due to the relatively small series of cases, and to inadequate follow-up, we are persuaded that there is a connection between the cerebral dysrhythmia and the abnormal behaviour, and that drug therapy is a valuable adjunct in management of these distressing problems.

Case Reports

CASE I. C. B. White male, aged 9. Chief complaint, headaches of 2 or 3 years duration, occurring every two or three weeks, and lasting from a few hours to one or two days. Said to be quick tempered and overactive. Vision corrected by glasses. No history of head injuries or convulsions. Usual childhood diseases. Described as an intelligent child. Family history not remarkable except to mention that the father had severe headaches as a child. EEG was done which revealed marked dysrhythmia from all leads. Occipitals revealed high voltage 12-13 per second pattern, with frequent spikes. Impression: Cortical dysfunction with occipitals more involved. This record was made one 7-8-49, at which time history was obtained to the effect that he had always been a "problem" child. He was placed on phenobarbital ¼ gr. t.i.d. On 12 -49, report was given as follows: Only occasional headache, taking phenobarbital at night. Had calmed down and was doing well in school. Repeat EEG at that time showed no improvement over the previous one.

On June 28, 1950, report was that the patient has gotten along well on one phenobarbital tablet. The mother stopped it while he was out of school, but reinstituted it when he returned to school in September.

CASE II. J. Y. White male, aged 9 years 5 months. Chief complaints: A behaviour problem always, being restless, energetic, overactive, destructive, refractory to discipline. He had recently been taking money out of the Sunday school offering, and also from his mother's purse. A poor student in school. Said to be unable to concentrate. Further history revealed that he was delayed in walking because of a tendency to fall forward. He talked at one year of age, and made sentences at 2½ years of age. He was a toilet training problem until the age of 3, and wet the bed consistently until he was 9 years old.

During the interview he would suddenly grimace, extend his arms and legs, look at his hands, then shut his eyes tightly as if in a spasm. Deep reflexes were 3 plus on a basis of 5 plus, otherwise neurological examination was negative.

Psychometric score was 87 per cent.

Electroencephalogram revealed a high voltage dissociated alpha pattern with isolated sharp waves from time to time. These sharp waves were out of phase in the bipolar portion of the record. Hyperventilation produced an immediate build-up which did not clear for two minutes following hyperventilation.

Treatment consisted of ½ grain sodium Dilantin, Q.I.D. and suggestions for improving discipline at home.

An EEG done seven months later was reported to show marked improvement with voltage then within normal limits and the alpha pattern was more stable. Hyperventilation produced little significant change. At that time his conduct was reported as improved, with the exception of continuing to lack a personal sense of right and wrong.

CASE III. D. H. White male, aged 5½. Chief complaints: Extreme nervousness, uncontrolled conduct, restlessness, temper tantrums and breath-holding. He was adopted as an infant, and described as being "normal until about 3 years of age." There was no history of bedwetting, night terrors, sleep walking, et cetera. No diseases except tonsillitis, measles, and two or three colds. School history was to effect that teachers could not control him, that he seemed unable to learn things like other children his age. In the family there are two older siblings, and as a result patient was spoiled and humored by his older siblings.

Psychometric test was attempted but the psychologist was unable to obtain any sort of cooperation.

Neurological examination was impossible.

EEG revealed a constant dysrhythmia in the form of high voltage sharp waves, and slow activity (4-8) per cent from all leads.

Treatment consisted of Elixir of Phenobarbital QS PRN, in view of the fact that he could not be made to swallow capsules of dilantin. Also, spanking was recommended at the time of gross misbehaviour.

Repeat EEG one year later showed improvement in the brain wave pattern, with a much lower voltage and less delta activity, though it was said to be unstable from all leads.

Clinical report at this time is that the child was now much improved, there having been "a complete change" within the last three months. His mother said that his temper tantrums had responded dramatically to the paddle. The father thought that there was nothing wrong with the child in any respect, and that it was foolish to give him any medication at all. The mother said in view of the father's attitude, and in view of the fact that the medicine had helped him so much, they decided to stop it altogether. Just what this case proves about treatment, I wouldn't know.

CASE IV. W. C. White male, aged 7½. Chief complaints: Fainting spells, bed wetting, temper tantrums, pronounced perfectionistic tendencies, always very jealous of his younger brother, wants everything his own way, cannot stand to lose in a game. Did not talk until he was about 3 years of age, when he began saying whole sentences. Had measles but no other childhood diseases. He was said to be very self conscious about bed wetting, as a result of which he refuses to spend the night away from home. He sucked his thumb and chewed on his clothes or handkerchief when not playing.

As to family history, the father and mother are both said to be nervous, the father having been rejected for military service because of neurophychiatric symptoms.

A psychometric test revealed an I. Q. of 133 per cent.

Neurological examination was non-contributory.

EEG revealed an asymmetry of the occipital area, the active on the left side being much slower and of higher voltage, suggesting a possible focus in the left occipital area. As to treatment: Changes in parental attitude and indiscipline were recommended, and suggestions for correcting his perfectionistic tendencies were made. He was placed on Elixir of Phenobarbital, QS PRN.

Repeat EEG ten months later showed a more stable pattern than the previous one, although hyperventilation brought about a large build-up in the occipitals bilaterally, with no suggestion of a focus. Clinical report made at the time of the last EEG was to the effect that the child seemed to improve, but since he was not well, the father decided to stop the medication.

Summary

In summary, we have recorded our experience with 25 cases of behaviour disorders in children, in a majority of which abnormal encephalograms were found. EEG techniques and findings have been given, treatment has been discussed, and four (4) case reports have been included. While no conclusions can be drawn, the following assumptions are offered: (1) There is a probable causal relationship between cerebral dysrhythmia and behaviour disorder; (2) At the present time there appears to be no definite correlation between electroencephalographic pattern and specific clinical entities; (3) Further investigation of this problem is in order; (4) Drug therapy directed toward control of cerebral dysrhythmia appears effective and justifiable.

The Role of Surgery in the Treatment of Essential Hypertension*

HARWELL WILSON, M.D.
Memphis, Tenn.

Introduction

THE SERIOUS nature of the problem under consideration is emphasized by the fact that hypertension with its associated complications is the leading cause of death in this country. The serious nature of this problem was well emphasized by Poppen when he recently wrote that "hypertension is the leading cause of death and is four times as deadly as cancer."[1] DeTakats emphasizes the same point by citing a report of mortality statistics by the Metropolitan Life Insurance Company, a report which demonstrates very strikingly the fact that cardiorenal disease is the leading cause of death.[2]

Patients with essential hypertension in the past have been treated almost entirely by the internist and the family physician. This is as it should be and the majority of patients with this malady will continue to be so treated in the future. Medical management has given a measure of palliation and relief to many patients with essential hypertension; however, it has probably not resulted in the cure of any of these patients. It is now recognized that in some intractable cases after careful study, surgery may offer certain of these people symptomatic relief which they could not otherwise obtain, a reduction in the blood pressure which while it may not be the same indefinitely has been shown to persist in a number of instances over a period of a few years and lastly, there is now good evidence to show that a number of the individuals who have proved intractable to medical therapy may be given a much better chance of longevity by surgical therapy. The place of surgery in the management of essential hypertension in some respects might be considered to be analogous to the place of surgery in the management of duodenal ulcer. We have felt that the majority of patients with duodenal ulcer should be properly handled by medical treatment. It is well known, however, that certain patients with ulcer are intractable to medical treatment or that complications may develop in the patient with a severe duodenal ulcer and that in patients in this group surgery may well make the difference between the patient being able to live a long and useful life in contrast to forced invalidism or earlier death from the complications of the ulcer. There is a further similarity in the role of surgery in the management of patients with these two conditions. We know that many patients with a duodenal ulcer who have had surgical therapy are more likely to remain well over a period of years if following the surgical treatment for the ulcer the patient also continues to be carried under a rather moderate type of medical régime. Similarly, the patient who has been subjected to surgery for essential hypertension will have a better prognosis if he continues to follow some of the generally accepted medical procedures which were used prior to operation. These consist of a diet which combats obesity and is relatively low in salt. The patient should have an adjustment of his mode of life so as to avoid undue stress and strain. The use of minimal amounts of sedation such as ½ grain of phenobarbital given 3 times a day will continue to be useful in many patients with essential hypertension.

---

*From the Department of Surgery of the University of Tennessee and the John Gaston Hospital, Memphis, Tenn.

**Guest speaker, Mississippi State Medical Association, paper presented May 17, 1951.

Diagnosis

The diagnosis of essential hypertension is one which is made by exclusion. By definition the term essential hypertension admits the fact that the exact etiologic factors in the production of this syndrome are unknown. Among the conditions which must be ruled out in establishing the diagnosis of essential hypertension are tumors of the adrenal gland, cerebral trauma, severe unilateral renal disease in rare instances, coarctation of the aorta, and polycystic disease of the kidneys. In most instances patients with hypertension which is caused by a tumor of the adrenal gland will show a characteristic type of blood pressure curve in which there are paroxysms of hypertension associated with periods where the patient has a normal blood pressure reading. It is true that in a few instances patients have a sustained hypertension where the etiologic agent is that of adrenal cortical tumor. Besides the use of the x-ray examination to study the adrenal area and the difference in the type of blood pressure elevation observed in these cases, one may now use the newer adrenolytic drugs in helping to establish the diagnosis of hypertension due to adrenal cortical tumor. These drugs when given in proper amounts usually cause the blood pressure to return to normal in an individual where the elevated tension is due to adrenal cortical tumor. The drugs, however, have no effect in patients with essential hypertension.

In a very occasional patient severe unilateral kidney disease associated with severe renal ischemia in the diseased kidney may be responsible for hypertension. The ingenious experiment of Goldblatt has shown that by gradually decreasing the blood supply to a kidney over a period of months hypertension would be produced and many felt that this would provide the answer to most patients suffering from this unfortunate condition.[3] Unfortunately, this has not proved to be the case. While a very occasional patient has been found to have hypertension due to this cause and this has been relieved by removing the abnormal kidney in the majority of instances it has not proved to be the basis of the patient's trouble.

The diagnosis of coarctation of the aorta can be easily established because of the fact that one has been unable to demonstrate the presence of a femoral pulse at the inguinal ligament on either side. In addition to this other findings associated with coarctation are apt to be present such as notching of the lower border of the rib due to erosion of the bone as a result of the elevated pressure of the intercostal arteries.

Hypertension due to cerebral trauma or to the presence of a brain tumor is usually relatively easily recognized. Similarly, there is usually little difficulty in establishing the cause of trouble in an individual with a severe elevation of the blood pressure where enlarged polycystic kidneys are present and are associated with a very marked elevation of the non-protein nitrogen in the blood.

Method of Study of Cases and Indications for Surgical Treatment

Before serious consideration is given to the surgical treatment of a patient with essential hypertension a very careful examination and evaluation of the patient is in order. A detailed history and physical examination is, of course, most important. The most significant information obtained from the physical examination is usually derived from a study from the eye grounds. With the opthalmoscope the arteries of the eye grounds can be very carefully studied and a great deal of information can be obtained regarding the extent of the hypertensive disease. Variations will be found in individuals with essential hypertension. Some patients will be observed where the eye grounds are relatively normal or simply exhibit spasticity of the vessels whereas in some grade 4 cases actual destruction of the nerve may have occurred and the patient may have actually lost vision as a result of the severe disease. After the chest has been studied by the usual methods of physical examination roentgen films are made to give additional evidence of heart size and of any significant pulmonary changes. The urine should be carefully examined and it is also felt that the non-protein nitrogen of the blood should be determined in all instances where the surgical treatment of hypertension is under consideration. After a careful history and physical examination has been made and the essential laboratory studies have been completed, it is then necessary to decide whether a given patient should have surgical treatment or not.

The height of the diastolic pressure is generally regarded as being more important in prognosis and in the selection of cases for surgical treatment than is the systolic pressure. We have arbitrarily decided that for a patient to be offered surgical treatment the diastolic pressure should be sustained at a level of 110 or above when the patient is at rest. It is also felt that the patient who has irreparable damage to the kidney should not be subjected to surgery. This is because of the fact that in such individuals where the kidney is irreparably damaged and the non-protein nitrogen persists at levels of 60 or above, even though the blood pressure may be reduced by surgical means, the life of the patient will usually not be prolonged. In fact, there is evidence that it may actually be shortened in some instances.

Patients who have previously had cardiac failure but who are again in a state of compensation in many instances may be suitable candidates for operation. The same is true for the individual who has recovered from one attack of coronary thrombosis. Such individuals have in numerous instances undergone operation satisfactorily and have been definitely improved by the procedure. On the other hand it is a grave mistake to operate on a patient who is in a decompensated state even though this decompensation may be relatively mild at the time of the operation.

Patients who have a cerebral accident with hemiplegia and who have recovered from same may be suitable candidates for operation. One should not operate on a patient who at the time of operation has evidence of severe brain damage from which he is not recovering.

This type of therapy when first begun was usually offered to only the relatively hopeless cases which might be considered to be of grade 4 as regards the serious nature of the disease. It is now appreciated that when irreparable damage has been done to the kidney, the heart, and the brain simply lowering the pressure will not prolong the individual's life, therefore, we feel the only patients who should be treated are those who might be considered to fall in type 1, 2, and 3 as regards the state of hypertension and the effects produced by hypertensive state.

We also feel that patients who are operated upon should previously have received a trial of medical management and indeed all the patients we have subjected to surgery have undergone medical management previous to surgery. In general the individuals in the third decade of life can be expected to obtain a better result than older individuals. Arbitrarily, 55 has been considered the upper age limit for operation in almost all of these patients and the great majority of patients that are operated upon fall in the third and fourth decade of life. It is generally agreed that the prognosis is better in women than in men. This applies to those who are subjected to surgery just as it does to those who do not have this form of treatment.

Methods of Surgical Attack in Essential Hypertension

In the development of the surgical treatment for essential hypertension a number of different operative procedures have been used. In the earlier days the subdiaphragmatic splanchnic resection was used. In this operation the splanchnic nerves were sectioned beneath the diaphragm. Some individuals were helped by this procedure, however, the results in general were discouraging. The next advance was made by Peet when he carried out the supradiaphragmatic splanchnicectomy and sympathectomy.[4] Later Peet extended this operation removing much longer segments of the sympathetic nerves and splanchnic nerves above the diaphragm.

The results obtained by this procedure were definitely superior to anything derived from the operation carried out solely below the diaphragm. It remained for Smithwick to combine the two procedures and to develop the technique for the original thoraco-lumbar sympathectomy which is now the basis for the surgical operation carried out on most of the patients with this disease.[5, 6] The technique consists of removing the lower thoracic ganglia and the sympathetic chain and the removal of the greater portion of the splanchnic nerve, the diaphragm is then opened and the celiac ganglion as well as the upper portion of the lumbar sympathetic chain is removed. There are variations of this procedure as some surgeons go higher in the thorax than do others, however, it is agreed by almost everyone that some type of thoracolumbar operation is the procedure of choice now since lesser procedures have not given nearly such good results.

Results of Surgical Treatment

In any evaluation of surgical results in a condition of this type it is extremely important that the patient be very carefully studied and properly evaluated and classified before being subjected to operation. This is because of the fact that it is well known that the prognosis in various patients with hypertension is extremely variable. Some patients have been known to live many years with hypertension without any particular type of treatment. On the other hand if one carefully divides the patients with essential hypertension into four groups as was done a number of years ago at the Mayo Clinic by Keith, Wagener, and Barker one may have a much better method for analyzing postoperative results.[7] Keith, Wagener, and Barker after carefully studying their patients and dividing them into definite groups of 1, 2, 3, and 4 followed the patients medically over a period of years and determined the life expectancy for each individual group. Other workers have since confirmed their observations regarding the classification of patients with essential hypertension.

In considering the results of surgical treatment one must first consider the effect of surgery in providing symptomatic relief; second, the effect of surgery on the blood pressure over a period of many months or years; and third, the effect of surgery in increasing the life expectancy of the patient. It is now generally recognized that 80 per cent of the patients subjected to surgical treatment will be definitely improved as regards such symptoms as severe headaches, extreme nervousness, lack of the ability to concentrate, and the ability effectively to carry out a worthwhile occupation.

Granted that after any type of such treatment patients may subjectively be improved, there have been enough patients now observed following operation by enough different individuals that it seems to be definitely established that the symptomatic relief is not simply derived from suggestive therapy. In our own experience for example we have seen some patients who have been completely incapacitated due to severe headaches and nervousness, but following operation were able to hold a regular job and to enjoy normal social contacts even though the blood pressure in some of these instances was not decreased. It should likewise be pointed out for the sake of fairness and completeness that it usually requires from two to three months following operation for the patient to become adjusted to the changes which operation produces and it is usually this period of time before they begin to feel definitely better. In the immediate postoperative period a number of the individuals are troubled with a type of intercostal neuralgia and some soreness and weakness in their muscles which counteracts some of the early benefits they may obtain as a result of the surgical treatment. The complaints of neuralgia, however, have almost always disappeared after the third month and it is usually after this time that the patient definitely begins to feel better as regards the general situation.

The effect of the operation on blood pressure is rather variable. In the immediate postoperative period there is apt to be a fairly severe postural hypotension in a number of individuals. This may cause the blood pressure to fall to levels of about 100 or below systolic when the patient is in the upright position. Usually, if this is a troublesome symptom it can be controlled by having the patient wear elastic stockings and a firm abdominal support for a few weeks.

This postural hypotension usually disappears after a few weeks to a few months at most. Similarly, a minority of our patients have obtained entirely normal blood pressure readings following operation. In the majority of patients the blood pressure has been reduced but in only a minority of the patients has the blood pressure been reduced to an entirely normal level for a very significant period of time. In other instances the pressure has been reduced from a dangerously high level to a level which is still higher than one would prefer but to a level which is not so likely to be associated with catastrophy.

In perhaps 20 per cent of the patients there is little or no change in the blood pressure although many of these patients are symptomatically benefited by the procedure.

Perhaps the most important consideration in judging the results of surgical treatment is to determine whether or not these patients actually live longer as a result of being subjected to surgery. The reports of Smithwick and of Peet give valuable data which help answer this question for us.[4, 5, 6] These are the only two investigators who have observed a sufficiently large group of cases over a long enough period of time to be of value in answering the question. According to Smithwick the longevity of patients with essential hypertension is very definitely increased by surgical treatment. It is true that in the patient who is practically in extremis with hypertension and who has already received irreparable damage to vital organs, operation fails to prolong life. In types 1, 2, 3, however, life expectancy seems to be definitely increased by surgery. These results are substantiated by Peet and Isenberg.[4]

Again it is generally thought the prognosis is better in women than it is in men. Another favorable bit of evidence regarding prognosis is concerned with a group of 14 hypertensive patients who were subjected to thoraco-lumbar sympathectomy by Smithwick and who later became pregnant and bore children. In almost all instances the blood pressure remained normal subsequent to delivery and it is generally recognized that a patient who has maintained hypertension and carries a pregnancy through term is subjected to serious hazards.

Certainly the final answer has not been obtained regarding the results and it will take years of careful study before the final answer will be known to us. There is good evidence, however, at the present time that in properly selected patients one may expect an improvement in the blood pressure in many cases, symptomatic improvement or symptomatic relief and what is most important a better chance of survival and of having a useful life for a longer period of time.

Summary and Conclusions

1. Essential hypertension is a complex disease of great importance because of the high mortality resulting from cardiovascular renal disease.
2. Significant advances have been made in the surgical treatment of essential hypertension during the past decade.
3. Many individuals with essential hypertension who are properly selected may anticipate symptomatic relief from surgical treatment and a longer life expectancy.
4. Consideration has been given to the proper study selection and management of patients given surgical therapy.

BIBLIOGRAPHY

1. Poppen, J. L., and Lemman, C.: The Surgical Treatment of Hypertension, J.A.M.A. 134: 1-9 (May), 1947.
2. de Takats, G.; Heyer, H. E., and Keeton, R. W.: The Surgical Treatment of Hypertension, J.A.M.A. 118:501-506, 1942.
3. Goldblatt, H.; Lynch, J; Hanzal, R. F., and Summerville, W. W.: Studies on Experimental Hypertension. I. Production of Persistent Elevation of Systolic Blood Pressure by Means of Renal Ischemia. J. Exper. Med. 59: 347-379, 1934.
4. Peet, M. M., and Isenberg, E. M. Surgical Treatment of Essential Hypertension, J.A.M.A. 130:467-473, 1946.
5. Smithwick, R. H.: An Evaluation of the Surgical Treatment of Hypertension. Bull. N. York Acad. M. 25: 698-716, 1949.
6. Smithwick, R. H. The Surgical Physiology of Hypertension, Surg. Clin. N. Amer. 29: 1699-1730, 1949.
7. Keith, N. M. Wagener, H. P., and Barker, N. W.: Some different types of Essential Hypertension; Their Course and Prognosis Am. J. M. Sc., 197: 332-343, 1939.

Dave Beck of Seattle, executive vice-president of the International Brotherhood of Teamsters (AFL), and one of the outstanding leaders of organized labor, came out flatly against socialized medicine in Atlantic City, declaring that the answer to the nation's medical care problems lies in the continued expansion and improvement of voluntary health insurance plans.

"The answer to the problem of medical care will not be found in any political panacea or through the development of a super-bureaucracy. The answer as proposed by advocates of Government-controlled medicine is contrary to our economic structure and goes beyond our traditional guarantees."

Public Relations*

J. G. THOMPSON, M.D.
Jackson, Miss.

ALL OF THE papers that I have heard read on this subject contained a lot of statistics. A great number of people agree that there is something wrong with our public relations, or perhaps I should say lack of public relations, as such. Nobody seems to have any definite cause, effect, and remedy that fits this particular deficiency in our particular patient relationship.

Now, this little paper concerns us, you and me. It has no statistics, no bibliography, and as far as I know, quotes nobody.

Some form of public relations has been practiced by the medical profession, in one way or another, since its beginning. After awhile, medicine being the uncertain art that it is, the honest leaders decided that making rash statements, and promoting oneself, should be left to the quacks and to the medicine showmen, and that the good men of the profession should get their patients by work and ability, and not by skulduggery, even if a young man had to starve almost to death for awhile before the public found out about him. Medicine, as a profession, leaned over backward in an effort to stay away from advertising of any sort.

We had World War I, won it on the field of battle, and lost it in the beards of our diplomats. Russia went berserk, and then went Bolshevik. We shook ourselves as a nation, came home singing "How you gonna keep 'em down on the farm after they've seen Paree," "Mademoiselle from Armentieres, parlez-vous," and speaking a sort of boudoir French such as "Voule vous couche avec moi, ces soir, Mademoiselle?", which was a new approach to an age-old problem. Another new question was being asked, too, and that was: "How do some people get so rich without robbing us poor people?" We buried the unknown soldier, and practically at the same time had a disarmament conference and gave away all our ships, and almost everything else, and laid the groundwork for World War II. We had a slight recession, then a boom, then a bust. Then a new deal, a re-deal and the WPA.

It was in 1932 or 1933, I do not remember which, that a definite change came over the people. And that change was the preamble to the answer, to the question that had been asked for so long: "How do some people get so rich without robbing us poor people?" The answer was complicated, but consisted mainly in a feeling that all poor people should be taken care of by somebody, anybody, and it made no difference why they were poor, or that some of them were not so poor. That was about the time that share-the-wealth, soak-the-rich, let-the-government-spend-its - way- to - prosperity, and such phrases became popular. It was somewhere about this time that the leaders in socialistic thinking decided that a frontal attack on the government would be bad, and that an infiltration into the higher branches of government administration by smart men who thought along socialistic lines would be much better. It was done this way. Whole departments were put on a "Let us help you" basis by these men. Income taxes went up. All sorts of policies were practiced, some of you may remember plowing under pigs to make hogs scarce, and paying people not to raise cotton. I am not saying that these things were wrong; I just said they happened. The infiltration has worked. That is, it has worked as far as socialistic thinking is concerned. All this time the doctor was being observed with covetous eyes. He was doing too well, and he was doing all right as far as he was concerned, though no differently from the way he and his medical forebears had been doing. The difference was that charity, indigence, pauperism, professional panhandling, do-gooders and the socialistic thinkers were organized, not as one group but as many overlapping groups, and it was somewhere along here that the little foxes began to get into the vineyard, and nibble at the unprotected vines. Good was done, people were helped, and the health, welfare and security of the nation was improved, and a great many people got jobs. Doing good for the underprivileged became a profession. Since doing good has always been the medical profession's business, it was most naturally one of the groups most vitally affected. In the meantime, the good old family doctor was eulogized and praised, and made into a sort of gone and lamented god. Personally, I disliked the idea of setting the doctor up as a sort of good, somewhat superhuman old patriarch, but felt that maybe I was paying too much attention to my own hypersensitive feelings. Then came World War II. Medicine was saved by the gong, but the pendulum continued to swing in the wrong direction. The doctor was getting too rich, he had a monopoly, a trust, and he was neglecting his duty to the negligent, he was specializing too much, he was moneymad; he was being seen in too many night clubs, and what the heck, he got to where he even objected to getting up at 2 a.m. to go to see some fellow he had never heard of who had come in drunk, and was very ill. After all, didn't health belong to everybody just the same as the roads, the schools, and a lot of other things? Well, maybe it does. A lot people seem to think so.

---

*Read before Section on Medicine at the eighty-third annual session of the Mississippi State Medical Association, Biloxi, Mississippi, May, 1951.

Now, how and where does public relations enter into all this?

Public relations is a business that deals with molding public opinion, influencing people, educating them along certain lines, and in general making for a better relationship and understanding between the fellow who is doing the job, and the fellow who is having it done.

The profession one is in has all to do with what kind of public relations he needs. A priest needs to look, act and talk like a priest. Whereas an electrician, as far as his public is concerned, needs to know his circuits, volts, amperes, conductors and transformers. Nobody asks him if he stays at home on Saturday night and shines up his kilowatts. Now, the medical doctor has an entirely different problem to that of any of his fellow professions or avocations. He isn't dealing with souls per se, although he may have a lot to do with how many people from his community take on that particular role at some certain time. He hears more confessions than many preachers and next to the priest, whose duty it is to hear confessions, he probably hears the most. He doesn't try cases, but lots of times he knows why who got shot. He doesn't deal entirely with bodies either, as the undertaker does. He is not an electrician, but some of them can tell you more about electricity than most electricians know. He lives in a paradoxical world. If the patient is sick, he gets paid for treating him, and yet the only way he can make a living is to cure people. What is the proper relationship for one caught in the meshes of such a net? Here is my version: As long as he is at the bedside, in the hospital, clinic or in his office, he must of necessity in order to retain proper relationship, develop and attain a professional technique becoming to his type of personality, and the job he is doing. He must act, look, and talk, and do what he thinks a good doctor should do. That is his hallmark, his individual way of doing things, and he should rise or fall according to how well he carries this on. Out of the office he must be a man, a real man, a gentleman. And he must conduct himself as one at all times. The moment he leaves his office he leaves his own particular realm, where he is king and absolute monarch, behind. He should not allow himself to be patronized by politicians, cops, gamblers or anybody else, and above all should neither expect nor receive any special consideration at the hands of anyone, for in so doing he lowers himself in the estimation of his public. Neither should he pay two or three prices for something just because he can afford it at the time. The salesperson will think he is a fool as far as business is concerned, and will get the wrong impression about the man. It will then be reflected back onto the whole profession. He should have time enough away from his business to mix and mingle with his neighbors to keep from getting lopsided. His fees should be in proportion to what he is able to do and what the patient is able to pay. This is my opinion and I do not care to take this any further unless somebody wants to make an issue of it.

Now, why do people go to a certain doctor? Usually because of his reputation, because he is the only one they can go to see, or because they like him and/or like his work. You are your own first line of attack in this problem, and your own last line of defense. The final judgment is going to be in your hands. Let's approach this very complex problem with as many of the four graces as we can command: wisdom, justice, temperance and mercy.

The second line in this front is local group action, concerted action along a certain line, or regimentation, but the privilege of exercising your own will along with your fellow-workers, a sort of symphony, or a jam session if you prefer, but your actions toward the public must blend to produce a pleasing and worthwhile effect. This can best be done after a great deal of time and effort has been spent studying your local problems, and then after much deliberation setting up whatever type of organization is needed. Caution: Do not under any circumstances go off half-cocked with some half-baked, untried procedure. This can only lead to confusion on the part of your public and failure to you. This particular local type public relations office is something like Pandora's box—it's full of all sorts of things and once you get the lid open, it's hard to close. When Daniel was thrown into the lion's den, an angel came down and stood by Daniel and touched the lions with a wand and they didn't harm Daniel at all. If your local organization creates the wrong impression, there will be no angel there to help you.

Your third line of this front is a concerted one and shall be necessary to work on relations from a state level, and naturally should have support from the component societies, and should receive financial aid from the state funds. Ideally it should be a full-time office. The functions of this particular type of office have been worked out by many states, and are nothing new. I do feel though that here again great care should be exercised in setting up this office, and in designating its duties. There are a great many things to be considered. The financial structure, the type of individual employed, the supervision, and its duties should be gone into in minute detail. One society in the state has had some of its best men studying this problem for months, the men have spent over fifty hours on this problem already, and I feel certain that any one of them would tell you they have hardly done more than scratch the surface.

Your fourth line, and I regret to mention this, is your national society. This is still the United States of America, and even though you may get a little confused at times about it, we still have a vote, and it is still the best place in the world to live. We have, of absolute necessity, got to support a national public relations committee if we are going to be able to continue to practice medicine as free men. Personally, I feel that the committee should be maintained by dues, and I feel that it should be a voluntary membership, but I certainly do feel that it should be a privilege to pay those dues, and that we should pay them. I don't like the idea of spending two or three million dollars a year putting on a campaign to do something that you can't even see, namely to create a favorable public opinion. But as far as that goes there is not a man in this room can see his own reputation, but we all have one and it seems to be taking care of us pretty well.

Summary

1. As far as the cause is concerned you have heard what I think about it, and you will have to reach your own conclusions.
2. The effect of this infiltration of socialistic thinking into high places in government, and into the minds of some of our people has brought some of them to believe that the health of everybody, rich and poor, should be cared for by the federal and local governments, and that an insidious approach is being made toward this end by various organized groups, and by the federal government itself.
3. The remedy starts with you and me as individuals, and continues from there by group effort to the highest councils in this land.

Distinguished Service Oration on the Life of Dr. Hugh Lewis Sutherland*

EUGENE R. NOBLES, M.D.
Rosedale, Miss.

IT IS a great honor for me to have the privilege of addressing you this evening in tribute to one of Mississippi's distinguished physicians—Dr. Hugh Lewis Sutherland.

In this period of confused thinking when unrest, uncertainty and fear dominate the minds of people throughout the world, it is refreshing on such an occasion as this to review the life and activities of one of the strong and sturdy characters in our profession who contributed his time and his talents to making this a better place in which to live.

Dr. Sutherland was reared in the atmosphere and tradition of another generation. He believed in that spirit of self-reliance which motivated the early settlers and inspired our forbears to the exercise of their own initiative, enabling them to build on this continent the healthiest, happiest and most prosperous nation the world has ever known.

This native son of whom we speak was born in 1848 at Camden, a thriving town on the Natchez Trace in the hills of Madison County.

His entire boyhood was spent there. His grandfather was the progenitor of this family in America. That worthy ancestor was born and reared in Scotland being a prominent member of the historic Sutherland family of Sutherland County. He migrated to this country at the close of the Revolutionary War. On his mother's side, he was a direct descendant of the illustrious Ball family of Virginia.

---

*Read at the annual session of the Mississippi State Medical Association, May 15, 1951.

Dr. Sutherland began his preliminary education in the public school at Camden, which he attended until he enlisted in the Confederate Army just before he was sixteen years old. The South was in such desperate need of manpower, just before Appomattox, that even though he was on crutches, and had been for four years because of osteomyelitis of the tibia following an injury to his ankle, he was accepted and served for several months in the Third Mississippi Cavalry until he was ordered discharged because of this disability by Colonel William K. Easterling, his commanding officer. He later rendered outstanding service to the people of his community while on duty with the Home Guard.

He always wanted to study medicine, so after the war, he completed his preliminary education at Brandon and then entered the University of Mississippi in order to equip himself better for this training. He graduated in 1870 with the degree of Bachelor of Arts. He entered Tulane University the following fall, receiving his medical degree from that institution in the spring of 1873. He then accepted an appointment as intern at the Charity Hospital, where he served almost a year. This internship, however, was interrupted suddenly. A Yankee employee was unusually rude to him, and in a moment of righteous indignation, he struck this employee a fierce blow on the chin knocking him down. New Orleans at that time was still under Federal control, and as he believed discretion to be the better part of valor, he promptly resigned his internship and immediately left the city.

He located at Bolivar, Mississippi, in 1874. This was a small settlement on the bank of the Mississippi River in the extreme southern part of Bolivar County.

It is of interest to observe that when Dr. Sutherland began the practice of medicine in this community, more than fifty per cent of the practice of physicians in Mississippi was on patients suffering from malaria, typhoid fever, dysentery, pneumonia and tuberculosis. Typhoid fever, which was so prevalent in the hills during the summer and fall months, was for some unknown reason rarely seen in the Delta. In this part of the state, malaria exacted a heavy toll in morbidity and mortality during that period. The incidence of pneumonia also was much greater in the Delta than it was in the hills.

The average life expectancy was thirty-two years. The mortality from all causes was three times what it is today. Twenty-five per cent of the deaths in the Delta of Mississippi were due to malaria and its complications alone. The death rate from some of the infectious diseases was incredibly high. For example, it was not unusual for the death rates from typhoid fever and from diphtheria to exceed one hundred per hundred thousand population. The death rate from that universal scourge, tuberculosis, in many areas was well above three hundred per one hundred thousand population. Smallpox claimed many victims every year. Especially heavy was the loss of life in infancy and early childhood for nearly half the total number of deaths occurred before the age of five years.

The medical profession, however, was beginning to lay the foundation for important advances in the control of all these infections for in the early 1870's Louis Pasteur established beyond question the germ theory of disease, and this was soon followed by the identification in other research laboratories the causes of such important diseases as tuberculosis, typhoid fever, diphtheria and pneumonia.

The introduction of antiseptic methods by Lord Lister in the early 80's also made possible the rapid strides of modern surgery which had already received a tremendous impetus in this country under the influence of the world-renowned South Carolinian, J. Marion Sims.

Another event of far-reaching importance occurred on July 9, 1898, when Sir Ronald Ross completed his demonstration of the entire life cycle of the parasite of bird malaria which is transmitted by the culex mosquito. This was a tremendous and fundamental achievement which aroused the activity and the enthusiasm of the entire scientific world as it now became perfectly clear and was soon proved that the closely related parasite of human malaria was conveyed in a similar manner from man to man by the anopheles mosquito.

In this same month and same year following the occupation of the city of Havana by the United States Army, Major Walter Reed, adopting the theory advanced for many years by Carlos Findlay, a native of Cuba, set out to prove that yellow fever was transmitted from man to man by the stegomyia mosquito.

Major Reed was strongly supported in this belief by Henry Rose Carter, of the Marine Hospital Service, who had recently had a convincing experience in a small epidemic of yellow fever at Onward, Mississippi. After numerous experiments extending over a period of two years, this great army medical officer was able to prove to the skeptical scientists of the world exactly how this pernicious tropical disease was transmitted from one individual to another.

Dr. Sutherland was quick to adopt the sanitary measures for the control of insect-borne diseases advocated by his friends and contemporary, that great sanitarian, General William Crawford Gorgas.

My friends, the mentioning of the name of this great American, a native of Alabama, always recalls to me, and I am sure it does to most of you, the tremendous world-wide impression made by his sanitary victories in Havana and Panama. It is easy to forget and time all too rapidly dims even the brighest records, so I would like to emphasize that no other single achievement in world history has done so much to improve the health, happiness and prosperity of the people in the South.

Following the successful conquest of insect-borne disease in Panama, General Gorgas visited London in 1914 and, according to Sir William Osler, received the greatest ovation ever given to a medical man in England.

When he returned to this country, the President appointed him Surgeon General of the Army and Congress, about a year later, promoted him to a major general, which at that time was an unprecedented rank for a medical officer. In this high office during World War I, he served his country with distinction and with honor.

In 1920, in London, the General became ill, and while in a hospital there, he was knighted by King George V. A few days after receiving this knighthood, he died and was given the funeral of a British major general, the highest honor that Britain could bestow. When his remains were removed to this country, the **London Lancet** stated that he was not only the best known and most uniformly successful medical administrator of his age, **but of any age.**

Dr. Sutherland was a horse and buggy doctor with a vision far in advance of his time. His entire professional life was spent in Bolivar County except for the five years from 1878-1883, which were spent in his childhood home in Madison County. He moved from Bolivar to Rosedale which was nearer the center of the county in 1898 and very soon, thereafter, became recognized not only as the most prominent physician in the county, but as a leader of organized medicine in the state.

One early spring morning in 1889, at the age of forty-one, he had an accident which profoundly influenced his career during the remainder of his life. At that time he was riding a high spirited horse, and in opening a gate at his barn, while still mounted, the animal lunged forward with such force that his left knee was crushed against the heavy gate post. This extremity was amputated just above the knee following the accident and three times in later years, because of pain in the stump.

He continued to practice medicine in spite of this disability, and it was astonishing to his friends how active so large a man could be on crutches. He made calls on horseback, night or day, even in the winter months when the roads in the Delta were practically bottomless. One of his friends said that he could walk with his crutches on the slick gang-plank of a Mississippi River steamer as readily and as quickly as anybody.

He was among the very first in the profession in the Delta to accept the theory that mosquitoes are the only agents responsible for the spread of malaria. He was an early advocate of the drainage of stagnant pools, screening, and the prophylactic use of quinine long before these measures were generally accepted and used as a means of controlling this disease.

The past thirty-five years, with the single exception of the influenza-pneumonia epidemic of 1918-1919, have been so free of major epidemics that we have little conception of the terrible ravages which our forbears suffered, nor the tremendous struggle and sacrifices the medical profession made toward their control and eradication. The chances are remote indeed that we will ever have another, for many of the diseases, which in earlier years took a heavy toll of life, have been banished from the mortality records and the others have been reduced to very minor proportions.

This progress in controlling infections has necessarily shifted the emphasis in medical practice.

As the American Medical Association begins the fourth year of its second century, we find ourselves concerned more and more with the degenerative diseases rather than with infections of childhood, and with illness of longer duration rather than with acute diseases. These changes bring to the medical profession a host of new and challenging problems.

We know that we cannot eradicate death from the face of the earth, but we can continue to prolong life and to relieve pain. Death is not preventable, but some deaths are postponable. The quest for longer life and better medical care will continue down through the ages. Attainment of one goal will mark the setting of a new and higher goal. Man's insatiable desire for yet another year of life prevents our enjoying any lasting glow of satisfaction from a job well done.

Dr. Sutherland's experiences with communicable diseases in the Delta kept him always keenly interested in preventive medicine and public health. He was appointed Public Health Officer for Bolivar County by the Board of Supervisors in April 1897, and he served in this capacity part time until 1911. He then retired from general practice and devoted his entire time to the public health office until his death.

He initiated Field Day in the public schools of the county and offered a prize of ten dollars to the pupil who wrote the best essay on "The Mosquito as a Carrier of Malaria."

He had drinking fountains installed in the schools of the county which were the first used in the schools of the state.

He gave a therapeutic dose of antidiphtheritic serum, probably the first given in the state, to a desperately ill infant in 1902. This baby recovered and is now president of one of the leading banks in the Delta.

In the summer of 1906, he saw a malady indeed strange to him in an Italian immigrant, who had recently come into the country. It was manifested by bilateral skin lesions on the back of the hands and face, associated with a sore mouth and a severe gastro-intestinal disturbance. He consulted several prominent diagnosticians, and it was agreed, and proved by later events, that this patient had pellagra. This was one of the very early cases seen in this state and precedes by a year a notable paper written by Searcy calling attention to the presence of a large number of cases of endemic pellagra in a mental institution in Alabama.

He wrote a little catechism for expectant mothers and a booklet on mosquitoes and flies as carriers of disease for the use of children in the public schools. These were published in 1900 preceding any other publications of that kind in the state.

He was co-founder and guiding spirit for many years in the King's Daughters Hospital at Rosedale. The building used for the purpose was formerly an old residence, but was opened to receive patients in 1900, antedating all but four other similar institutions in the state.

He received many compliments from men of distinction for the great service he rendered the citizens of Bolivar County as health officer.

Dr. Sutherland's activities in this Association were many and varied. He never lost interest.

For many years to every bill introduced in the legislature which concerned the medical profession, he contributed freely of his time, advice and means, in seeing that the merits and demerits of the measure were properly presented to this assembly. He was primarily responsible for many valuable laws pertaining to public health.

In 1910, the legislature failed to pass an amendment to the Medical Practice Act of 1882. This amendment provided that applicants for examination must be graduates of a four-year medical school. It was strongly advocated by the legislative committee of this Association and there was great disappointment when it failed to pass. Dr. Sutherland, deeply aware of the need for this amendment, initiated the attack on the legislature at the next annual meeting of this Association by reading a paper on "The Duty of the State in the Conservation of Human Life."

This address was given wide publicity in the press and medical journals, and it is believed that it had a great deal of favorable influence on the members of the legislature, for in the following year, 1912, the amendment was passed.

Dr. Sutherland was the author of numerous papers on diseases peculiar to the South. He was a recognized authority on malaria, and especially the treatment of its chief complication which in those days was often fatal, hemoglobinuria.

In November, 1909, he read a paper before the Southern Medical Association at New Orleans on "The Illusions and Idiosyncrasies in the Treatment of Malaria," and in this paper he tried to dispel many illusions concerning malaria that had been accepted as true by the laity, and some members of the medical profession, by stressing the fact that it was an insect-borne disease transmitted to man only by the bite of an infected female anopheles mosquito. Dr. Sutherland concluded this essay by emphasizing that the South was enjoying splendid prosperity in every field of human activity and that she should erase from her fair name the blot of malaria, because it is a disease that could be prevented, and which interfered very materially with her industrial growth and development.

I am sure that if he could come back to earth, his chief delight would be to hear that malaria, his greatest enemy, has practically been eradicated from the South and especially from the Delta of Mississippi that he loved so much.

He would be amazed that Charity Hospital in New Orleans, which he left so suddenly in the early part of 1874, does not now furnish enough malaria for teaching purposes.

He would be especially pleased to see here in Mississippi those wheels of industry financed by northern and eastern capital humming at an ever higher rate of speed each year.

He would be delighted to know that a child, white or black, born in the balmy climate of the Mississippi Delta can now enjoy as good, or better, health and live as long as he would if born anywhere else on the face of the earth.

Dr. Sutherland was a popular member of this society and received from the medical profession many deserved honors. He was affiliated with all the important medical organizations of his time and was interested in the activities of all of them. He believed in organized medicine and was always one of its staunchest supporters.

He held many offices in this Association, served on the Council for three years and was appointed on the State Board of Health by three governors but declined to serve each time because of ill health. He was elected president in 1902.

He was president of the old Tri-State Society in 1904. In 1914, he was elected honorary member of this Association, the first man to be so honored.

Dr. Sutherland had a commanding appearance. When he arose to speak on the floor of a convention hall, he had the attention of every listener, because he spoke so clearly, concisely, and so to the point. His audiences knew that his opinions were honest convictions honestly arrived at.

His great service to his fellowman, the high principles which he observed at all times, his devotion and his courage were an inspiration to all who came in contact with him. He had sympathy, pity and cheerful hope in the dark hour of sickness and sorrow which inevitably come to the sick room. President Eliot of Harvard once said, "In these intangible things are found the durable satisfactions of life; fame dies and honors perish but loving kindness is immortal."

He enjoyed many blessings, chief of which was the admiration and respect of a host of friends in and out of the profession, the lifetime companionship of a devoted wife, and the love and affection of four fine sons and two splendid daughters, three of whom are living today.

He lived in a period that has been referred to as the heroic age of American medicine, for during this time, no branch of science contributed more to the welfare and happiness of the people of this country than did the progressive march of medicine.

I am sure that when the epic story of medical progress in Mississippi finally is written, no figure will stand higher than that of Dr. Hugh Lewis Sutherland. It can truly be said of him that as a laborer in the field of medicine, he gave his full measure. He was an honored member of the medical profession, a pillar in this Association, a wise counsellor, beloved father and devoted husband.

Dr. John W. Cline, San Francisco, new AMA president, declared in his inaugural address: "American medicine has gone steadily forward. Some of the once great medical systems of the Old World have faltered and declined under stultifying Government control while American medicine has forged into a position of world leadership."

A Noble Service Only Physicians Can Render

J. T. WEEKS, M.D.
Jackson, Miss.

THERE is no problem in preventive medicine which requires more dexterity and diplomacy upon the part of the physician than giving information for and promoting safe and effective vaginal hygiene. Physicians through fear of being misunderstood are justly reluctant to volunteer advice on a subject so personal. Many women are also hesitant to request the advice of a physician with references to feminine hygiene, and frequently dismiss annoying symptoms as normal manifestations peculiar to their sex. They are unaware of the danger of what they consider minor disturbing conditions which when neglected often develop serious complications before a physician is consulted.

It is unfortunate and deplorable that millions of women in this most enlightened and scientific age continue to use preparations, for feminine hygiene, which are harmful.

The belief by many women that household disinfectants, germicides, laundry and cleaning preparations containing bleaching agents are satisfactory for vaginal hygiene is tragic. A great opportunity for service lies in the correction of this erroneous belief. These products are designed for heavy duty purposes and we know are too strong and irritating for delicate human tissues. Unfortunately the harm done is not immediately apparent, and their use is continued.

How can these truths be best transmitted to and impressed upon women? My opinion is that only through physicians prescribing, encouraging and insisting upon the use of a formula of proved safety and merit can this danger to health be intelligently and effectively overcome.

There are few physical impairments more disturbing, disabling and crippling than diseased conditions of the female reproductive organs. Many of these maladies can be prevented through intelligent, cautious and effective methods of vaginal hygiene. Our profession should not regard with complacency this most neglected field in the practice of preventive medicine, which means so much to so many.

COMMERCIAL EXHIBITORS

Mississippi Medical Association

The following list of commercial exhibitors contributed very much to the success of the Mississippi State Medical Convention in Biloxi:

A. H. Robins Co., Inc., Alcorn Laboratories, Inc., American Surgical Supply Co., Ames Company, Inc., A. S. Aloe Co., Ciba Pharmaceutical Products, Inc., C. B. Fleet Co., Day Drug Co., Dick X-Ray, Inc., Doho Chemical, Inc., Eli Lilly and Co., E. R. Squibb and Sons, Grant Drug Co., General Electric X-Ray, Inc., G. D. Searle and Co., J. A. Majors Co., Jones Bros. Drug Co., Kay Surgical Co., Kimbrough and Quint Drug Co.

Lederle Laboratories (Division American Cyanamid Co.), M. and R. Dietetic Laboratories (Similac Division), McNeil Laboratories, Inc., Mead Johnson and Co., Mercere-Stover, Inc., Parke-Davis and Co., Philip Morris and Co., Ltd., Inc., Sandoz Pharmaceutical Division of Sandoz Chemical Works, Inc., Southern Surgical Supply Co., Inc., The Southeastern Optical Co., Inc., The Upjohn Co., U. S. Vitamin, Inc., Van Antwerp Drug Co., VanPelt and Brown, Inc., Winthrop-Stearns, Inc., Wm. P. Poythress and Co., Inc.

A mouse will always find free cheese in a mousetrap, but I never saw one that was happy about it.—Anon.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton .... Oxford
President
Dr. J. G. Thompson .... Jackson
President-elect
Dr. T. M. Dye .... Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. .... President
Greenville, Miss.
H. T. Smith .... President-elect
McGehee, Ark.
L. T. Carl, M.D. .... Vice-President
Jackson, Miss.
D. T. Owens, M.D. .... Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. .... Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

WHO IS FAILING?

We have many doctors and friends of the profession who think the fight against socialized medicine has been won. They think a little money talked and won. It talked and informed some people and did good no doubt, but the victory is not won, no more than the war with Russia is won. State medicine must be whipped on our own local level by good service, good will and good public relations. We must have cooperative medicine and it must be adequate to meet the essential needs of the people. Few people die for the want of a doctor; some get well anyway. But if a man thinks he needs a doctor and can and will pay the bill he has a right to one, a right to know how sick he is anyway.

The doctor, the pharmacist, the dentist, and the nurse really make up the medical profession, while the hospital is the cornerstone in distributing medical service to the people. It seems however, that while the professions are holding their prices about on a level, hospital expenses continue to climb.

The people are upset and talking much about the high cost of medical care. It is high. The hours of our service professions are also being much discussed—eight hours for nurses, shorter hours for drug stores, difficulty in getting doctors on night calls, et al. Now, if we are all at fault we need to set ourselves right. The American way of life is at stake. We need to do our part for preservation and happiness. We must know the facts and inform the public. The doctor, the pharmacist, the nurse, and the dentist belong to an honored group, not a labor union; each deserves to make a living, but money must not be the god of any. Should all the drug stores close the same day? Should all the doctors take off the same afternoon? Should the drug store open and close with the general mercantile store? Should the nurse leave one leg unbathed when the dinner bell rings letting the patient take a chance on getting the other bathed by the next nurse? Shall the patient be a real personality or shall he just be a number?

Now there is another side for the public to think about. How does it spend its money? Last year 20 billions for gambling, 19 billions for new automobiles, 17 billions for whisky, 12 billions for tobacco, 8 billions for cosmestics, 5 billions for education, 1.7 billions for physicians' services, 1.3 billions for hospitals, 1.4 billions for drugs and sundries, and .9 billion for dentists. Yes, medical expense is high; it is very costly to die also. Medical care accounts for only four per cent of the family budget. The strength of a nation is in the health of its people. But the people have not been soaked too badly after all. Two thousand years ago life expectancy was about 20 years, a hundred years ago, 40, now 68, with 70 for women. Human years have been multiplied and volume of life expanded. At one time 70 weeks was the time for treating syphilis, now six days. Gonorrhea slaughtered the young womanhood of our country just a few decades ago, now three doses of penicillin do the trick. Job of Bible times suffered with boils and carbuncles for about two years, but now one week with sulfa and penicillin smoothes them over without being picked. We did wait and worry for the nine days' crisis in pneumonia, but now two to three days in the home and the once dreaded disease is gone. It is about out of date to puncture ear drums for otitis media; mastoiditis and osteomyelitis are passing from surgery to medicine with better results. Heart disease will soon be on the decline. Nine days was the set time for a confinement case in the hospital; now we do well to keep them three. Appendicitis did keep the patient ten days to three weeks, but now four or five days seem to be adequate. Medicines are high, but very valuable. Hospital expenses are high, but human life is also valuable.

Gambling kills initiative and industry like communism. Whisky as a beverage is incompatible with the machine age in which we live. Tobacco is under fire for causing ulcer, cardiovascular disease, and cancer of the lung. Forty-nine billions for these three amount to ten times the cost of illness and ten times the cost of education in this nation. Are we not enslaving ourselves while accusing our benefactors of shortcomings we are grossly guilty of as a nation?

No man can afford to shun the responsibility of citizenship. Better give up almost anything than our freedom.

You will read with interest the letter from Dr. G. S. Bryan of Amory, the sage of Monticello in Mississippi medicine. He has done a fine work while he has been confined to his home by illness. The work he has done has served the Association well. Dr. Bryan has been outstanding in the practice of medicine, a leader in organized medicine and a civic leader. Drop him a line. Go to see him. He has wisdom yet to impart.

No man, regardless of his profession, should shun his responsibility as a citizen. Liberty was bought with a price. It must be rescued and saved. The church school has played a big part in our freedom, in our democracy, in our American way of life. Even an infidel for the sake of security would do well to invest in Christian schools, as well as medical schools.

Above everything the doctor should be a first class citizen. This will do more than just cold dollars to keep medicine free and democratic.

ARKANSAS ATTRACTS MEDICS

We recently had opportunity to consider our neighboring state of Arkansas when our good friend L. H. McDaniel put on one of his famous programs at Tyronza.

Arkansas is the most "resourceful" state in the union. The God of Creation through his department of geology smiled upon this state in a bounteous manner. Ninety-five per cent of the nation's bauxite is mined in this state. The soil is so deep in some of the river bottoms that logs may be struck a hundred feet from the surface. Forty-two minerals are mined in Arkansas, including diamonds. This state is noted for its Indian relics that speak volumes about the earliest inhabitants on this continent. Its wild life also constitutes a close rival in wealth to the famed hot springs.

Little Rock is the capital, but on May 24, 1951, the medical eyes of this section were focused on the attractive little city of Tyronza. Every citizen was on tip-toe, led by a great practitioner in medicine, a man with a professional mind, a medical soul and a missionary heart—Dr. L. H. McDaniel, who had his ancestral beginning in Tippah County, Mississippi, not far from Blue Mountain College. The cross section of human society invited and assembled at this meeting was most significant. Organized medicine, the specialist and the practitioner, were present, as were the minister, the teacher and the student. The press was represented by **The Commercial Appeal** and the **Arkansas Gazette.** Executives were present, as well as plain voters, and the dynamic governor of Arkansas brought a stirring message in person.

It was encouraging to see the tassels of our professions, especially the medical, clasp hands with the grass roots for an anastomosis in the interest of human society.

There was food for thought and food for physical dilection. More than four hundred guests feasted at the barbecue. It was a sober meeting for once and no apologies were made for the absence of the inebriating cup. All in all, we applaud this meeting as a pace setter for mutual understanding and the best for public relations. Marvelous was the scientific session, entertaining and soul invigorating the entire meeting, and interesting to predict history to grow out of the Tyronza meeting.

The heart of the program follows:

Greetings and Remarks

Dr. George Lull—Chicago, Ill.—Secretary A. M. A.

Dr. R. B. Robins—Camden, Ark.—President-Elect American Academy of General Practice.

Dr. Curtice Rosser—Dallas, Texas—President Southern Medical Association.

Mr. C. P. Loranz—Birmingham, Ala.—Secretary Southern Medical Association.

Dr. John Archer—Greenville, Miss.—President Mid-South Postgraduate Assembly.

Dr. Jere Crook—Jackson, Tenn.—Past President Southern Medical Association, Representing Tennessee Medical Society.

Dr. Charles Henry—Little Rock, Ark.—President Arkansas Medical Society.

Dr. Karl John Karnaky—Houston, Texas—Texas Medical Society.

Mr. Frank Ahlgren—Memphis, Tenn.—Editor The Commercial Appeal.

Mr. Harry Ashmore—Little Rock, Ark.—Editor The Arkansas Gazette.

Scientific Program

Dr. W. R. Brooksher, Fort Smith, Ark.—"The Bulwark of Free Medicine—The County Medical Society."

Dr. R. L. Sanders, Memphis, Tenn.—"What's New in Surgery."

Honorable Sid. J. McMath, Governor of Arkansas—"The Medical Center in Arkansas."

Dr. Louis Krause, Professor of Medicine, University of Maryland, Baltimore, Maryland—"What's New in Medicine."

TO THE MEMBERS OF MISSISSIPPI STATE ASSOCIATION:

As many of you know, I have been a shut-in for about six years. I have suffered since January 1945 from the effects of a coronary attack. Nevertheless, I have worked hard during all the months and years since then trying to get material such as photographs of all men who have ever practised medicine in Mississippi, together with data concerning these men. I have written many hundreds of letters urging and pleading for these photos and data. I have assured everyone that this is **not** a commercial undertaking, that it is purely a labor of love. I have had no secretary nor have I had so much as postage furnished me. This undertaking is about as complete as I am able to make it. This material will now be placed in Dr. McCain's care to be kept in his department for preservation and display. First, it will be turned over to Dr. Underwood until such time as Dr. McCain is ready to receive it.

This work of six years or more has been done for **you** as, perhaps, my last work for organized medicine in Mississippi. Please remember that I am an old man, 88 years old, and that I am no longer able to attend our meetings and that I beg you to visit me in my home. Some of you have done this, and I am grateful for your kindness to me. I love you ALL.

Your good friend
G. S. Bryan

News and Comment

ADDED TO FIFTY-YEAR SCRAPBOOK

The following is the text of an original letter written by Dr. Rudolph Matas on September 30, 1950, acknowledging a token from the Fifty-Year Club.

Dr. W. H. Frizell
President Fifty-Year Club
Brookhaven, Mississippi

My dear fellow veteran in medicine;

Please receive this note as a message of acknowledgment and thanks for the pleasure of your remembrance and good wishes on the advent of my ninetieth birthday (September 12, 1950) which contributed so agreeably to the thoughts and recollections of that memorable day.

Your message of congratulations and good wishes has touched me deeply by the gratefulness of your semi-centennial reminiscences. Your good wishes are cordially reciprocated. I am enclosing a picture reminiscent of a long unfulfilled promise. I trust you will find it pleasing for the sake of Auld Lang Syne.

Always your affectionate comrade and well wisher.
R. Matas

INTERNATIONAL COLLEGE OF SURGEONS

The sixteenth annual assembly of the United States Chapter of the International College of Surgeons will be held in Chicago on September 10 through the 13, 1951, with headquarters at the Palmer House.

An excellent program has been arranged. Prominent surgeons from the United States and other countries will participate. Scientific sessions will be held by all specialty sections of the United States chapter.

The annual banquet will take place on Wednesday evening, September 12. Mr. Lawrence Abel, F.R.C.S. (Eng.), of London, will be the principal speaker.

The assembly will conclude with the convocation, to be held in the Civic Opera House on the evening of September 13. Senator Estes Kefauver will deliver an address on "The America of Tomorrow."

Hotel reservations may be arranged by writing to the Housing Division, Chicago Convention Bureau, 33 North LaSalle Street, Chicago 2, Illinois.

PAN-PACIFIC SURGICAL ASSOCIATION

Doctor F. J. Pinkerton, president of the Pan-Pacific Surgical Association, reports that plans are well underway for the Association's fifth congress and advises doctors to make arrangements as soon as possible to attend this meeting.

Dates for the Honolulu congress are November 7-19, 1951. The scientific program, which will begin on November 12 and continue through November 16, will include sessions in all divisions of surgery, with papers presented by topflight surgeons from the Pacific area countries.

All hotel and travel reservations should be made through the Association office, Suite 7, Young Hotel Building, Honolulu, Hawaii.

U. S. VITAMIN CORPORATION BUYS ARLINGTON CHEMICAL COMPANY

U. S. Vitamin Corporation, New York, N. Y., has announced, through its president, H. B. Burns, the purchase of time-honored Arlington Chemical Company of Yonkers, N. Y. The 72,000 square-foot plant, together with a large new building to be constructed thereon, will be utilized to enlarge the services of both U. S. Vitamin and Arlington to the medical and pharmaceutical professions.

DEATHS

DR. WILLIAM H. EASON

Services for Dr. William Henry Eason, who died May 11 in North Mississippi Community Hospital, were held in the W. G. Pegues Funeral Home. The Rev. Guy Lord, pastor of First Methodist Church, Tupelo, officiated, assisted by the Rev. Raymond Kays, pastor of First Christian Church.

Dr. Eason was on the North Mississippi Community Hospital medical staff. Born at Coldwater, Miss., he was the son of the late W. H. Eason. Before coming to Tupelo, he practiced medicine in Potts Camp. He resided in Tupelo thirty years.

He was graduated from the University of Tennessee School of Medicine in Memphis, then did graduate work at Tulane University and at Howard Medical College.

Dr. Eason was a Methodist. He served as steward 29 years. He also was a 32nd Degree Mason and a Shriner.

He leaves his wife, Mrs. Joyner Green Eason of Potts Camp; a daughter, Mrs. Dan H. Wylie of Potts Camp, and two sisters, Mrs. Emma Hall and Mrs. Betty Allen, both of Memphis.

DR. B. L. ROBINSON

Dr. Burton L. Robinson, son of Mrs. J. B. Furr of Meridian, and the late Dr. B. L. Robinson, whose death brought to an abrupt end the promising career of a young Meridian physician-surgeon some weeks ago with meningitis and apparently had been on the road to recovery when an unexpected cerebral hemorrhage caused his death.

He had spent two weeks in the Ochsner Clinic in New Orleans and a week ago had gone to a veteran's hospital for convalescent treatment. Dr. Robinson saw service as a Navy medical man in World War II and until a year ago had been medical officer of the 153rd Fighter Squadron, Mississippi Air National Guard, at Meridian. In late spring of last year, he had moved to Edna, Tex., to take up private practice there.

Dr. Robinson is survived by his wife, Mrs. Polly Walker Robinson of Edna, Tex.; mother, Mrs. Furr of Meridian; brother, Dr. Brewster C. Robinson of Tulane, Calif., and a sister, Mrs. Maida Kilroy of San Antonio, Tex.

DR. E. L. RICHARDSON

Funeral services were conducted from the First Baptist Church for Dr. Elbert Leech Richardson, 69, prominent Louisville physician, who died May 26.

Dr. Richardson had been a physician for the past 44 years. Until a full-time health officer assumed duties at the local health center last year, Dr. Richardson had served as county health officer for 25 years.

He was born at Louisville April 16, 1882, and was the son of the late William H. and Kitty B. Richardson, pioneer Winston County settlers. He was graduated from the medical school of the University of Nashville, now part of the University of Tennessee, in 1907 and had done postgraduate work on several occasions at Tulane University.

Dr. Richardson was a member of the American Medical Association, the Mississippi Medical Association and the East Mississippi Medical Association, having been a past president of the latter organization.

He was a Mason and a Woodman and had been a member of the Baptist church since 1895. He was an ardent sportsman and enjoyed hunting and fishing.

On June 8, 1909, Dr. Richardson and Miss Edna Triplett of Louisville were married. She survives him.

In addition to his wife, he is survived by two sons, Capt. Howard Richardson with the Air Force in Germany and David Richardson, a medical student at Tulane University; two daughters, Mrs. John S. Fair and Mrs. William B. Carothers, both of Louisville, and seven grandchildren.

DR. J. S. ROSAMOND

Dr. J. S. Rosamond, prominent retired physician of West, was killed May 29 in an automobile collision on U. S. Highway 51 about seven miles north of Durant.

Dr. Rosamond, alone at the time of the accident, was driving east on a side road and his car was struck by another vehicle as he drove across Highway 51. He was rushed to Durant in an ambulance but was pronounced dead upon arrival.

Driver of the other machine, south, was an unidentified man from Tupelo.

Dr. Rosamond was a graduate of Memphis Hospital Medical College, Memphis, Tenn., in 1901.

DR. JOHN L. TRICE

Dr. John Lilly Trice, 59, founder of Tupelo's first hospital, died May 16 after an extended illness. Dr. Trice was a graduate of Tulane University, New Orleans, La., class of 1915.

After practicing medicine in St. Joseph, La., he became head of the Natchez Charity Hospital in 1916. During World War 1, he was commissioned as a first lieutenant in the Army Medical Corps, and came to Tupelo afterwards.

DR. E. W. HUNTER

Funeral services were held for Dr. E. W. Hunter, 81, who died May 7.

Dr. Hunter was born in Lafayette County, Miss. He graduated from Ole Miss and Tulane College of Medicine. At the time of his death he was the oldest Ole Miss alumnus in Leflore County.

He took a very active interest in civic and educational affairs, founding the Edwin William Hunter, Jr., memorial scholarship at Ole Miss, to aid worthy students. He established a scholarship at Greenwood High School and contributed to the colored schools in the city.

He retired from active practice several years ago, but maintained his active interest in his profession and local affairs.

Surviving are his widow, Mrs. Mary Walker Brooke Hunter; two daughters, Mrs. Frank Barnwell, Thornton, and Mrs. W. M. Keathley, Cleveland; five grandchildren, Mary Brooke and Matthew Steele, Jr., Morgan City; Edwin Hunter Steele, Fort Jackson, S. C.; Mary Hunter Barnwell, Thornton; Mrs. Dixon Dossett, Beulah.

DR. A. VANCE MURRY

Services for Dr. A. Vance Murry, physician at Macon, were held at the McBride Funeral Home in Ripley, May 20.

Dr. Murry, who had been in ill health several years, was found dead in a cabin at a tourist court at Lonoke, Ark. He apparently died from a heart attack. He was 44.

Dr. Murry was born in Tippah County, the son of a pioneer Tippah County family. His grandfather, Dr. John Y. Murry, practiced in Ripley for 60 years before his death in 1915. His father, Dr. C. M. Murry, practiced from 1890 to November, 1946. He had practiced in Ripley until a few years ago when he moved to Macon. He also practiced for a while in Oklahoma.

He attended school here and at McTyiere School of Medicine, Tenn. He attended the University at New Orleans.

He was a veteran of World War II. He was a member of the Methodist Church and a Mason.

He leaves a son, A Vance Murry, Jr., and a daughter, Sallie Murry, both of New Orleans. a brother, Dr. Charles M. Murry of Oxford, and two sisters, Mrs. H. T. Hamer of Port Arthur, Texas, and Miss Mary Miller Murry of Ripley.

DR. E. B. KEY

Services were held for Dr. E. B. Key, pioneer Meridian physician who died at Riley's Hospital June 9 after a lengthy illness.

Dr. Key was 73 and had been in ill health since suffering a stroke about five years ago.

A member of Meridian medical circles for 30 years, Dr. Key came from Kemper County. He was presented a 50-year certificate by the Lauderdale County Medical Society, of which he was a former president, for his more than a half-century of service to this area. Hospitalized at the time, presentation of his 50-year pin was to have been made at a future date.

Dr. Key was the father of Col. Al Key and Fred Key, who won worldwide acclaim in the summer of 1935 when they established a record for an endurance flight here. Both men saw Pacific duty in World War II and Colonel Key, still with the Air Force, is stationed in Washington. Fred Key is manager of Key Field, Meridian's municipal airport named in their honor.

He also leaves his wife, Mrs. Ola Oliver Key; another son, Ben Key of Meridian; a sister, Mrs. Arnett Davis of Meridian, and a brother, Will Key of Philadelphia.

DR. N. G. GHOLSON

Death broke a "family doctor" record in Marshall County, a record which is unique for this Mississippi family.

Dr. Norman Glasgow Gholson died Sunday, April 8, at a Memphis hospital at the age of 75.

Now, for the first time in more than 100 years, there's no Dr. Gholson practicing in Marshall County.

His father, grandfather, and greatgrandfather all practiced in that county, but he leaves no physician-son to succeed him.

Born in Holly Springs, Dr. Gholson lived there all his life, except for the years he was getting his education. He was graduated in 1904 from the Medical College of Ohio and licensed the same year in Mississippi.

Woman's Auxiliary

MEMBERS AT LARGE

If there is no organized auxiliary unit in your county, please signify your interest by mailing dues of $3.00 to Mrs. J. D. Simmons, treasurer, Cleveland, Mississippi, and she will help you keep in touch by sending you a yearbook and pertinent agenda undertaken by the organization this year. Only three counties in the state have no representative organization, and this year a goal is to have every county with an active doctor's wife.

MRS. GEORGE OWEN

The organization's new president is a doctor's wife of superb attributes for leadership. Her active participation in Jackson music and women's clubs has evinced a wide understanding and vision. Mrs. Owen possesses a wealth of personal poise and charm, in addition to fine executive ability, and a program for high achievement in the months ahead.

Please plan to have her visit your auxiliary before Christmas if possible.

STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

VITAL STATISTICS

Copies of Records

Between December 1, 1950 and May 1, 1951 there were issued 29,600 certified copies of records on file in the Vital Statistics Division —25,800 were birth certificates and 3,800 were deaths.

Also during the same five months 25,000 plain photostats of birth certificates were made and sent to new mothers.

The principal uses for so many certified copies of certificates were in connection with claims on the United States Government and in making application for positions. Many business organizations, as well as the federal government, now require birth certificates of all applicants.

Regional Meetings with Registrars

Regional meetings with registrars are being held in the following towns during June: Brookhaven, Forest, Hattiesburg, Starkville, New Albany, Clarksdale and Greenwood. These conferences have been held in June every year for the past fourteen or fifteen years and they have resulted in untold benefit to the registration work, which is the most difficult in the United States. At each of the meeting places this year there is a panel discussion on the responsibilities and problems in connection with recording of vital records. The participants include a local private physician, a local funeral director, a nurse, clerk, and registrar from the local health department.

Statistical

Some of the principal statistics on births and deaths in Mississippi during the past year, together with a few comparisons with the previous year, may be of interest:

1. There was a difference of only 78 deaths between 1949 and 1950.
2. There were 1,700 fewer births reported last year than in 1949.
3. Marriages increased 4,000 last year over 1949. Total last year, 56,700; total year before, 52,700. Nearly half the marriages in Mississippi are of couples from other states, due to the fact that we have no premarital venereal disease examination.
4. Divorces decreased about 200 under 1949. The total last year was 6,073. This means about one divorce to about five marriages, when outside couples are not included.
5. Apparently there were only fifty more heart disease deaths last year than in 1949. However, a new International List of Causes of Death was put into effect January, 1949, which made some changes as to assigning heart disease and chronic nephritis as causes of death. Perhaps a comparison of heart deaths of 1950 with those of 1951 will come nearer to reflecting the progress of heart disease.
6. There was an increase of only 106 in cancer deaths over 1949, which seems to indicate a slowing down in deaths from this disease.
7. Tuberculosis deaths decreased 23 in number—581 in 1949 and 558 in 1950.

Selected Statistics for 1950
Mississippi
On Basis of Residence

	Total	*White*	*Non-White*
Deaths	20,567	9,466	11,101
Births	64,427	27,188	37,239

Principal Causes of Death

Heart Disease	5,546
Vascular lesions	2,200
Cancer	2,143
Accidents	1,319
Certain diseases of early infancy	1,142
Pneumonia and influenza	817
Chronic and unspecified nephritis and other renal sclerosis	647
Tuberculosis	558
Homicide	301
Arteriosclerosis	276

	Total	*White*	*Non-White*
Acute poliomyelitis	14	8	6
Typhoid fever	2	0	2
Diphtheria	18	5	13
Maternal deaths	165	30	135
Rate per 1,000 births	2.6	1.1	3.6
Infant deaths	2,348	763	1,585
Rate per 1,000 births	36.4	28.1	42.6

* * *

Public Health Statistical Service

The Public Health Statistical Service has continued to provide routine and special services during the past six months' period. All vital statistics tabulations for the calendar year 1950 have been prepared and tables and factual data have been furnished for the biennial report.

A film strip on medical certification of causes of death has been received from the National Office of Vital Statistics. It is hoped that this film can be presented to medical societies throughout the state in an attempt to secure more uniform medical certification. Requests for mortality data by cause of death are received daily from physicians and other persons interested in the health of Mississippians. The reliability of these data on cause of death is dependent upon the accuracy and completeness, not only of diagnosis, but also of information recorded on death certificates. Every effort is made to classify cause of death according to the statement of the physician, but if he records morbid conditions in an improbable sequence it is impossible to determine the true underlying cause of death.

Monthly, quarterly and annual reports of morbidity have been prepared. Cases of certain diseases, unreported prior to death, have been added. During the last six months of 1950, a total of 492 cases were included by this office from information on death certificates.

Venereal disease case contact investigations have been analyzed for each month and for the semi-annual period. Punch card records of the syphilis surveys have been prepared and a preliminary report was made for the first six months of the fiscal year.

Records for the special congenital syphilis study have been edited and correlated with birth records. A proposed code and tabulations have been submitted to the Public Health Service for review and criticism. About 1900 records have been received to date from Washington and Sunflower counties.

The third semi-annual follow-up of cases on the central tuberculosis register was made as of December 31, 1950. New record forms were used at that time which apparently were satisfactory. The analysis of the register has been prepared and the records are being brought up to date in anticipation of the follow-up as of June 30, 1951.

Tabular analyses of Emergency Maternity and Infant Care records for 1943, 1944 and 1945 have been submitted to the Children's Bureau. It is hoped that the punch cards for the remaining years can be processed as time permits.

Reports of the activities of the dental hygienists have been made as requested.

The semi-annual report of physicians in Mississippi as of January 1, 1951, showed a net decrease of 32 physicians during the past six months—the first decrease since regular reports were scheduled on July 1, 1947.

Included in other anticipated new projects is the maintenance of punch card records on dentists in Mississippi, which has been requested by the dental member of the State Board of Health and the Supervisor of Mouth Health.

INTERPRETING MEDICAL LITERATURE

PEDIATRICS

Clinical Observations on the Use of Terramycin Hydrochloride. Ernest Q. King, Charles N. Lewis, Henry Welch, Eugene A. Clark, Jr., John B. Johnson, John B. Lyons, Roland B. Scott and Paul B. Conely, Washington, D. C., J.A.M.A. 143-1-4, May 6, 1950.

"Terramycin hydrochloride was administered orally to 30 patients with various diseases including pneumonia, urinary tract infections, whooping cough, bacteremia due to Salmonella, and lung abscess. The dosages were: in patients 14 years old or older without urinary infections, 750 mg. every six hours; with urinary infections, 500 mg. every six hours; in children 9 years old or younger, 500 mg. every four hours. The drug was found in the blood and urine within one hour and for five hours after administration. Side reactions were few and mild, except in one patient who had severe gastrointestinal distress with diarrhea and the drug was discontinued. One patient with severe pulmonary infection accompanied with pulmonary edema and avitaminosis died. In the remaining 29 patients, results were excellent in 9, good in 15, fair in 4 and poor in 1 only. The findings indicate that terramycin is a useful addition to the antibiotic drugs."

COMMENT: The article on administration of terramycin is very interesting and is worthy of consideration, but I would like to make a note of warning that in giving terramycin that certainly it should not be prolonged because of the irritation to the ailmentary canal. In certain cases it has a very bad effect, producing diarrhea that often lasts some several weeks.

Abdominal Wounds*

Robert Lynch, M. D.†
New Orleans, La.

Although the incidence of abdominal wounds is comparatively low, these injuries are important because, if not properly treated, they can terminate fatally in a large percentage of cases. The reported mortality rates in large series of cases range from three to 92 per cent with an average of about 50 per cent. The higher rates are undoubtedly due to errors in diagnosis and delay in treatment.

Several factors may be responsible for such errors. Usually there are other injuries in addition to the abdominal wound, and pre-occupation with more obvious wounds may cause undue delay in definitive treatment of the more serious abdominal injury. Thus, multiple lacerations might be considered "booby traps" in the ultimate treatment of patients with an abdominal injury. Thoracic and spinal injuries commonly produce ambiguous signs and symptoms which may further mislead the attending physician in making the proper diagnosis. Thus, concealed injury to the spine and thorax may produce all the manifestations of intra-abdominal damage. Even without this red herring, the true nature and full extent of the intra-abdominal injury may be concealed by the parietes themselves. Finally, the varying degrees of impaired consciousness in patients following severe injury may in many instances be responsible for prolonged delay and failure in recognizing the urgency of an intra-abdominal injury.

Abdominal wounds may be classified into the penetrating and nonpenetrating ones. In the former the parietes have been punctured whereas in the latter they have not.

Penetrating Wounds—Penetrating wounds of the abdomen are produced by application of a sudden, narrow force. They comprised about 99 per cent of abdominal injuries sustained during the last war$_1$. In civilian practice this percentage is much lower. At Charity in New Orleans, where the incidence of admissions for accidental injuries is high, admission of penetrating abdominal wounds averaged one every six days$_2$. In other large medical centers such wounds account for one admission every twelve days.

In penetrating abdominal wounds determination of the extent and type of injury may not be as simple as one would suppose on first thought. Penetration may be small and damage to the contained viscera may not be readily apparent. The initial evidence of pain, tenderness, and shock may be no greater than anticipated from the actual parietal wound. Acute alcoholism, or previously administered drugs, may further mask the danger signals.

These warning signs depend largely upon the organs injured. The hollow viscus is more commonly injured than the solid viscus. The organ most frequently injured is the colon; the transverse and sigmoid are more often injured than other portions of the large intestine. Next in frequency to the colon is the jejunum, followed closely by the diaphragm, stomach and ileum. The incidence of injury is about the same for the liver and mesentery, and the bladder, duodenum and spleen are damaged less frequently.

The degree of shock produced by penetration of a viscus is dependent upon the amount of hemorrhage, the quantity of spillage from the hollow viscus and the organ affected. I have seen disruption of the bladder with massive spillage of urine into the free peritoneal cavity accompanied by minimal shock. On the other hand, a small amount of gastric contents in the peritoneal cavity usually produces signs of massive peritonitis with profound shock.

Spillage of the contents of the gastro-intestinal tract through a penetrating wound into the free peritoneal cavity produces an immediate irritant or chemical peritonitis which gains in intensity as infection becomes more manifest. The higher the point of perforation the more irritant will be the contents. Thus, penetrating wounds of the stomach are characterized by more acute signs of peritoneal irritation than the same size wound of the sigmoid. However, entrance of the abdominal contents into the peritoneal cavity is not nearly as liable to produce massive infectious peritonitis as the same amount of material from the colon. The danger of potential infection from contents of the gastro-intestinal tract increase, the lower the site of rupture.

---

*Presented before the Delta County Medical Society in Greenwood, Miss., April 6, 1951.

†From the Departments of Surgery, Ochsner Clinic and Tulane University of Louisiana, School of Medicine, New Orleans.

The degree of hemorrhage from a penetrating abdominal wound is often difficult to estimate when the patient is first seen. For example, if a large mesenteric vessel has been severed, the hemorrhage may be severe, as manifested by the degree of shock and its intractability to replacement therapy. The constant flow of blood from the wound is an indication of the source of the unalleviated shock. However, a similar hemorrhage into the substance of the liver, producing the same profound shock initially, may be masked by the temporary improvement of the patient and the lack of bleeding from the point of perforation. This sequence may allay the attending physician into a false sense of security and dampen the element of urgency produced by the first case.

Perforating abdominal wounds have a better prognosis, on the whole, than nonpenetrating wounds. This may be due to the immediate attention drawn to the underlying structures by the wound itself and the more frequent exploration and repair undertaken. The mortality rate depends directly on whether or not exploration is done, the time which has elapsed prior to exploration and the number of organs involved. Thus, Walker[3] pointed out that in a series of abdominal wounds explored shortly after admission and in patients operated upon within one hour of injury the mortality rate was 11 per cent but this rose steadily hour by hour until after six hours it was 50 per cent. In a series of abdominal wounds of the colon and rectum sustained during the African and Italian campaigns of World War II Chunn[4] reported an average time lag between infliction and exploration as 10.9 hours; in patients whose colon or rectum alone was injured the mortality was 19.5 per cent. This mounted steadily and rapidly with each organ added until the mortality was 100 per cent in cases of injury to the colon or rectum together with any five additional organs.

Nonpenetrating Wounds — Nonpenetrating abdominal wounds are a challenge to the physician attempting to determine the organs damaged and the extent of injury. More superficial minor injuries may direct the attention away from the abdomen. In addition to the other distractions there is a great tendency to delay exploration when the abdominal parietes are intact.

Nonpenetrating abdominal wounds producing damage to the underlying viscera are the result usually of a strong application of a blunt force. The force produces a rapid rise in intra-abdominal pressure with a tendency to disruption of a hollow viscus. A sustained force results in a greater incidence of sheering or crushing injury. These comprise 47 per cent of patients with abdominal injuries admitted to the hospital. In contradistinction to the penetrating wounds, the solid viscus is more commonly injured in the nonpenetrating abdominal wound. According to Behrend[5], the kidney is damaged three times as often as any other organ. However, it has been my experience as well as that of others that the spleen is damaged more frequently. Probably this discrepancy is actually one of extent, because hematuria following contusion of the kidney is certainly indicative of injury; yet just as certainly it cannot be classed as a major injury. The liver is injured most often, followed in frequency by the left kidney, right kidney and small intestine. In approximately 25 per cent of these more than one organ is injured.

In injury of the solid viscus control of hemorrhage is the most immediate consideration. Whole blood is a peritoneal irritant but not to the extent of an equal amount of the content of the gastro-intestinal tract. This hemorrhage may be immediate in case of laceration of the capsule of the solid viscus or it may be delayed. The immediate hemorrhage is usually massive and often continues unabated. The delayed hemorrhage may be of two types: in one the laceration of the capsule is slight and the greater part of the hemorrhage lies subserosally until the capsule ruptures, further permitting massive spillage into the peritoneal cavity accompanied by a more intense rate of hemorrhage; or the initial hemorrhage may stop spontaneously by clot formation only to have the clots displaced and recurrence take place. Both blood and intestinal contents may be diluted with one another, the former masking the symptoms and signs of the intense peritonitis usually produced by the latter.

Splenic damage with its accompanying hemorrhage is generally indicated by mild signs of peritonitis. In addition, the patient will usually complain of pain and hyperesthesia in the left shoulder, known as Kerr's sign[6]. Saegesser[2] pointed out that in case of splenic rupture there will often be a point of tenderness between the sternocleidomastoid and scalenus medius muscles on the left. These patients should be handled no more than absolutely necessary and the eliciting of shifting dulness is usually a late sign in their downward course. Solis-Cohen and Levine[8] demonstrated that in cases of splenic fracture a roentgenogram of the abdomen will reveal characteristically obliteration of the splenic shadow, dilatation of the stomach with serrations apparent on the greater curvature, and increased intensity of the greater curvature.

In fracture of the liver, hemorrhage may follow any of the foregoing outlined patterns. In addition, bile may be introduced into the peritoneal cavity which not only retards clotting but induces infection at a later date. Tenderness and rigidity of the right upper abdominal quadrant as well as dulness in the right flank usually appear early. Because of the paucity of localizing signs and the amount of hemorrhage that usually accompanies damage to the liver, the mortality rate in these cases is unusually high—in unexplored groups about 90 per cent.

Severe renal damage is usually indicated by hematuria, pain in the back, and unilateral muscular rigidity of the back. Pain may also be present anteriorly, and in the flank. This is ordinarily less intense, but is accompanied usually by rigidity and rebound tenderness. Renal injuries are the one group which must be handled conservatively until the full extent of the damage and function of the contralateral kidney can be determined. Incidentally, intravenous pyelograms made within twenty-four hours of injury are not reliable.

To establish a diagnosis of a ruptured hollow viscus in nonpenetrating injuries of the abdomen it is common to rely on the presence of free air in the peritoneal cavity. However, in less than half of the cases in an upright film air will be seen under the diaphragm. Unfortunately, it is often impossible to obtain an upright film in these patients. Slater[9] pointed out that in a left lateral film of the abdomen with the patient still supine air is visualized in about 90 per cent of cases and may be recognized because it has tapering points rather than being circumscribed by the intact intestinal wall. Its sharply defined margins separate it from air present in the subcutaneous tissue.

Perforation of the stomach in nonpenetrating abdominal injuries is rare because of its relatively tough wall and its position. The jejunum is the commonest site of injury and the perforation is usually within two feet of the ligament of Treitz. The lower ileum is the next commonest site of perforation and the cecum third. These are all accompanied by signs of peritonitis, but as in penetrating injuries, the extent depends upon the amount of spillage and the degree of hemorrhage.

So far retroperitoneal hemorrhage and traumatic pancreatitis have not been mentioned. The latter rarely occurs and, although producing peritonitis, has been an extremely difficult diagnosis to make preoperatively. The serum amylase level should be determined in all suspected cases, the titer showing an early and high rise in those cases of pancreatitis. Retroperitoneal hemorrhage may be equally confusing. In these, bluish duskiness of the lower extremities and persistent semi-erection of the penis have been described, but I have seen neither of these. The patients respond rather promptly but not completely to the usual treatment for shock. Abdominal distention, minimal peristalsis, and often moderate generalized abdominal tenderness and rigidity without localizing signs are commonly present. Flank tenderness on one side appears later. Finally, although the patient still seems to be in moderate shock, there is rapid return of capillary tone.

Treatment of Abdominal Wounds—It has been generally agreed that in abdominal wounds death within two hours is due to hemorrhage, death within two days is caused by shock, whereas death after two weeks is the result of infection. Thus, it is important first to obtain an accurate history including the type and direction of the injury, the instrument causing the injury, and the time elapsed since injury. A careful physical examination should also be done as rapidly as possible with the patient stripped. Particular attention should be paid to existing scars because of the possibility of previous nephrectomy, for instance.

Secondly, shock should be combatted by administration of large amounts of whole citrated blood, after blood samples have been withdrawn for hemoglobin and hematocrit determinations as well as cross matching. The patient should not be moved until he has responded to antishock measures.

Diagnostic roentgenograms should then be made as indicated, but the patient should be kept supine. In questionable cases of hemorrhage the hematocrit reading should be determined at frequent intervals.

In penetrating abdominal wounds, the wound should be debrided and the abdomen explored. In nonpenetrating wounds the decision to explore must depend on the response to treatment for shock. If such signs as abdominal tenderness, rigidity and rebound tenderness do not disappear following treatment for shock, exploration is indicated. The degree of continued hemorrhage may be estimated by the blood pressure and pulse as well as hematocrit value. In questionable cases exploration is indicated.

On exploration the site of the hemorrhage should be sought first, secondly, gross perforation and thirdly secondary damage should be determined. All viscera should be carefully examined. Splenectomy should be performed for fracture of the spleen. Laceration of the liver should be treated by direct ligation of obvious bleeding points, insertion of oxygel or gelfoam into the laceration and closure with mattress sutures with flat liver needles. The control of hemorrhage from lacerations of the liver by gauze packing should be condemned. Although these packs may control the primary hemorrhage, secondary hemorrhage frequently follows disturbance of the gauze pack. Moreover, secondary hemorrhage twenty-four or forty-eight hours after successful removal of the pack is not uncommon. Ordinarily, renal wounds should be managed conservatively but continuous hemorrhage or multiple fractures of the kidney require nephrectomy.

Minor wounds of the small intestine should be sutured transversely to the axis of the intestine after the edges have been debrided. Areas of multiple wounds or major lacerations should be resected primarily. Damage to the mesentery and its vessels usually requires resection.

Small wounds of the large intestine may be closed primarily. Exteriorization should be attempted for moderate to large wounds; if this is not feasible, the wound may be closed and a defunctioning colostomy created at a more proximal point. For rectal wounds a proximal colostomy should be performed and provision made for retroperitoneal drainage, posteriorly.

In conclusion, it might be said that following the Civil War, as well as the first and second World Wars, the advantage of exploration of abdominal wounds has been pointed out repeatedly. The mortality rate in unexplored penetrating and nonpenetrating wounds has been uniformly high. In both types the mortality rate decreases as the incidence of exploration increases. Thus, in a recent comparative survey of perforating injuries of the colon and rectum at Charity Hospital in New Orleans at ten year intervals the mortality rate has been reduced from 60 per cent to 20 per cent. Earlier exploration in doubtful cases will probably lower the mortality rate still further.

REFERENCES

1. Welch, C. E. and Giddings, W. P.: Abdominal trauma. Am. J. Surg. 79:252-258 (Feb.) 1950.
2. Loria, F. L.: Historical aspects of penetrating wounds of the abdomen. Surg., Gynec. & Obst. 87:51-550 (Dec.) 1948.
3. Walker, W. H.: Penetrating abdominal wounds. Arch. Surg. 60:55-64 (Jan.) 1950.
4. Chunn, C. F.: Wounds of the colon and rectum. J. Florida M. A. 34:269-276 (Nov.) 1947.
5. Behrend, A.: Treatment of perforations of the solid abdominal viscera. S. Clin. North America 31:409-414 (April) 1949.
6. Craighead, C. C. and Miangolarra, C. J.: Non-penetrating abdominal trauma. New Orleans M. & S. J. 103:375-377 (March) 1951.
7. Saegesser, B. H.: Physical Signs in Clinical Surgery, ed. 9, Baltimore, Williams & Wilkins Co., Pp. 251-253.
8. Solis-Cohen, L. and Levine, S.: Roentgen diagnosis of lacerated spleen. Radiology 39:707-710 (Dec.) 1942.
9. Slater, M.: Penetrating wounds of the abdomen. Am. J. Roentgenol. 59:168-176)Feb.) 1948.

SENATOR KEFAUVER TO ADDRESS INTERNATIONAL COLLEGE OF SURGEONS

United States Senator Estes Kefauver will deliver a major address on "The America of Tomorrow" at the 16th annual assembly of the International College of Surgeons, United States and Canadian Chapters, Chicago, Ill., September 10-13.

Resuscitation in Respiratory and Circulatory Arrest*

ARTHUR C. GUYTON, M.D.
Dept. of Physiology and Biophysics
University, Mississippi

RESPIRATORY and circulatory arrest are frequent occurrences on the operating table, and it is essential that the surgeon and anesthetist be familiar with the procedures for resuscitation in each of these two conditions. Also, there are many other occasions when the physician may be called on to resuscitate a patient whose respiration has ceased or whose circulation has stopped. Therefore, in the present discussion, the resuscitation procedures under all circumstances will be presented briefly.

Respiratory arrest most frequently occurs because of depression of the respiratory center in the medulla, which may result from too deep anesthesia, too much sedation, too much morphia, hemorrhage into the medulla, compression of the medulla, or prolonged ischemia or anoxia of the medulla from any cause. Cessation of respiration may also result from damage to the nerves which conduct respiratory impulses from the medulla to the respiratory muscles, this damage being either in the spinal cord or in the peripheral nerves. Obviously, the cause of respiratory arrest and the expected duration of this arrest will determine to a great extent the procedures to be employed.

In the treatment of medullary depression, drugs have proved to be of only slight value. Nevertheless, caffeine, metrazol, picrotoxin, coramine, benzadrine, and strychnine are frequently employed as respiratory stimulants. Most of these drugs are in reality stimulants for the entire central nervous system rather than specifically for the respiratory center. However, picrotoxin has a more specific action than other CNS stimulants on the basal portions of the brain, and this drug has been found particularly valuable as a counteractant to barbiturate depression of respiration. Coramine (nikethamide) has a specific stimulatory effect on the carotid bodies which in turn excite the medulla very powerfully by sending impulses up the ninth cranial nerves. Thus, there are at least two drugs which have a relatively specific action on respiration. Yet, it must be emphasized once again that all of these drugs are capable of overcoming only the mildest degrees of medullary depression. Therefore, resuscitation of the patient with respiratory arrest is essentially a physical problem.

When nerve impulses to the respiratory muscles are blocked, the chest relaxes into a state of permanent expiration. This means that the diaphragm rises high into the chest and the rib cage flattens. By exerting as much external force as possible on the chest from all different angles, it is possible to express not over 1000 cc. of air from this "dormant chest". By blowing air into the trachea, or by expanding the chest with an externally applied vacuum, it is possible to fill the lungs with approximately 3500 cc. of air in addition to that already present in the "dormant chest". Therefore, it is quite obvious that physical methods of resuscitation which expand the chest are far more likely to succeed than are methods which contract the chest beyond its resting state.

The Schaefer prone method of artificial respiration depends on compression of the upper abdomen against the supporting surface so that the abdominal contents will force the diaphragm upward into the chest. Therefore, this method contracts the size of the chest cavity, and, as noted above, the absolute maximum amount of respiratory exchange which may be effected with each breath is 1000 cc. Usually, because of inefficiencies in the method, the respiratory exchange is less than 500 cc. per breath, and it is usually impossible to maintain life in a patient with complete respiratory arrest for more than a few hours when using this method. Most other simple chest compression procedures are even less efficient than is the Schaefer method.

The pulmotor blows air or oxygen through a mask over the mouth and nose into the lungs at a rhythmical rate of 12 to 20 times per minute. This device is excellent for resuscitation when used correctly, but because of very severe misusage in the past forty years the name "pulmotor" has fallen into disrepute among the medical profession. As each blast of oxygen is delivered from the pulmotor to the patient, this expands his lungs. The operator must then make provisions for emptying the lungs before the next blast; otherwise, the patient's chest will continue to expand until the lungs rupture. The final result of such negligence is an acutely emphasematous lung with very severe lung edema and frothing at the mouth. Death may occur from these effects alone. Other deterrents to the use of the pulmotor are difficulty in keeping an airway open to the lungs, slowing of the circulation through the lungs because of compressed air against the vessels, and leakage of compressed air down the esophagus into the stomach. Nevertheless, the pulmotor principle is the simplest one in use on artificial respirators, and it is efficient enough that almost all artificial respiration in animal experiments is performed with pulmotor types of respirators. The modern hospital usually has several "resuscitators" on its floors, which, in general, are nothing more than improved pulmotors with check valves and perhaps intermittent vacuum decompression, these features having been added to avoid the lung rupture hazard of the older machines.[1]

---

*Presented before Section on Surgery at the Mississippi State Medical Association Biloxi, Mississippi, May, 1951.

In using the Drinker respirator, the patient's body is placed inside a large, airtight chamber with his head protruding through one end and an airtight rubber gasket fitting around his neck. The opposite end of the respirator chamber is made of a large leather diaphragm which, when forced inward and outward by a motor driven eccentric wheel, causes pressure alternating with a vacuum around the patient's body. This in turn causes the chest to expand and contract, and adjustable check valves on the chamber allow the operator to regulate the depth of inspiration and expiration.

The reason why the Drinker respirator has met such wide acceptance is the fact that it expands and contracts the chest cage by external forces in exactly the same manner as do normal muscles of respiration. Therefore, the function of the circulatory system is not adversely affected by positive pressure within the lungs, air does not pass into the stomach any more than in the normal person, and there is no danger of rupturing the lungs. Yet, there still remain two undesirable features of artificial respiration in such a respirator: First, the patient no longer has intrinsic control over his respiration, and, as a result of improper adjustment of the apparatus on the part of the operator, the patient may be under-respired to an extent that anoxia and acidosis occur, or he may be over-respired to the extent that alkalosis, tetany, and fall in blood pressure occur. Second, no provision is made in the mechanics of the respirator for the patient to cough. Therefore, secretions collect in the lungs, sometimes to such an extent that death may occur within a few days from pneumonia or atelectasis. To prevent such occurrences, modern respirators are usually provided with a mechanism for lifting the foot end six to eight inches above the head so that the patient may have continuous postural drainage.

The "jacket" or "dome" respirators operate on exactly the same principle as the large Drinker models, except that the chamber fits only around the chest, the abdomen, or both.

Electrophrenic respiration is a new vogue in artificial respiration and may be applied successfully in selected cases[2-6]. The apparatus consists of an electronic stimulator (which may be nothing more than a sixty cycle transformer) connected to a motor driven potentiometer so that electrical stimuli are delivered in a waxing and waning cycle approximately every three seconds. When these stimuli are used to stimulate the phrenic nerves, a cycle of diaphragmatic contraction and relaxation occurs with each cycle of stimuli. The resulting respiration is probably more nearly that of a normal individual than is that produced by any other type of artificial respiratory device. Though it is possible to apply the electrical stimuli to the outside of the neck immediately over the phrenic nerves, satisfactory results can be obtained best by applying the electrodes, through incisions, directly to the phrenic nerves. Obviously, this is fraught with the hazard of nerve damage, and, despite the simplicity of the apparatus, special training in its use is necessary for success. Furthermore, the method cannot be used in patients with phrenic nerve degeneration such as occurs in spinal polio of segments C-3, 4, and 5. Also, it is not very plausible to maintain electrodes on the phrenic nerves for more than a few days at a time.

Instead of respiratory arrest, there are times when the circulation of blood ceases, though the patient may still be respiring. Such a condition may result from simple cardiac standstill, air embolus of the heart, or ventricular fibrillation, and in each of these conditions there is a chance of saving the life of the patient provided that resuscitation measures are instituted immediately[6-9].

Cardiac standstill most frequently results from very deep anesthesia, and only occasionally can the heart be made to beat again by giving cardiac stimulants such as epinephrine. Therefore, it frequently becomes necessary to hand-pump the heart until an intrinsic rhythm can be resumed. If the hand-pumping is successful, much of the anesthetic will usually be removed from the circulation within a few minutes so that the cause of the standstill will be eliminated. In order to attain effective hand-pumping of the heart it is necessary to make a long incision very rapidly in the fourth or fifth left interspace, extending the incision almost to the sternum and then sectioning several costal cartilages to allow adequate entry of the hand into the chest. The heart is then rhythmically and forcefully compressed against the sternum at a rate of approximately 50 times per minute. Using this procedure, the patient's mean blood pressure can usually be maintained at approximately 40 mm. of mercury for as long as an hour. Because of the poor circulation and the collapsed left lung during this hand-pumping, concurrent artificial respiration with pure oxygen has been found to be of great added benefit and may mean the difference between success and failure in restoring the heart to normal function.

The causes of air embolus in the heart are obvious, but there has never been a satisfactory procedure of treatment established for clinical usage. Therefore, it is necessary to discuss this condition on the basis of data which has been obtained in our laboratory on dogs. Our experiments have consisted of oxygen infusions over long periods of time and under varying conditions of injection, such as varying size of the aperture in the needle, varying position of the needle in the venous or arterial system, and varying pressures of injection. The purpose of these experiments has been to establish a practical method for giving intravenous oxygen, but in many of the experiments it has been necessary to deal with excessive collection of oxygen in the chambers of the heart.

When large quantities of gas enter the ventricles, the circulation of blood ceases, or almost ceases, because the heart can no longer act as a pump despite a normal beat of the ventricles is of such low viscosity that it cannot make the valves close. The condition, therefore, appears to be analogous to the hand pump used on farms, such pumps having to be primed with water before the valve will close sufficiently to pump more water from the well.

In our experiments we have utilized the fact that gas floats to the top of fluid to aid the heart in overcoming oxygen embolus. When the dog is in an upright position, the quantity of oxygen which can be injected intravenously without embarrassing the heart has been found to be several times as great as that which can be injected when the dog is in a supine position. Also, when gas embolus occurs in a supine dog, changing his position to the upright position will usually restore circulation. Therefore, it seems that, in the upright position, gas does not become entrapped very easily in the ventricles of the heart but passes instead into the pulmonary artery and aorta respectively. Some of this gas then appears to be lost through the lungs into the expired air, and the rest of it is eventually absorbed into the body fluids. No evidence has been found that oxygen or air passing through the vessels of organs of the body other than the heart causes any particular harm. Thus, on the basis of animal experiments it appears that human subjects of air embolus in the heart might also be greatly benefited by rapidly shifting their positions.

Ventricular fibrillation is one of the most common causes of circulatory arrest. This condition occurs occasionally on the operating table as the result of chloroform or cyclopropane anesthesia or cardiac irritation due to other factors. It occurs frequently as the result of electrical shock, and it is often the final cause of death in patients with arteriosclerotic heart disease. Because many hearts which go into fibrillation are perfectly normal otherwise and because there exist very effective means of stopping fibrillation, this cause of circulatory arrest deserves particular attention.

In order for an effective beat of the heart to occur it is necessary for all of the muscle fibers in the ventricular walls to contract simultaneously. Indeed, the Purkinje conducting system of the heart is adapted for the specific purpose of exciting all the ventricular muscular fibers within a few thousandths of a second of each other. Fibrillation is caused by a failure of this Purkinje system to continue its normal function and a substitution instead of incoordinate impulses passing throughout the ventricular muscle—first to one point, then to another point, around to the other side of the ventricle, and finally back to the starting point of the cycle to begin over once again. Therefore, only a small portion of the heart muscle contracts at a time, and as these localized contractions occur other areas of the ventricles relax, so that the net volume within the ventricular chamber remains approximately constant and no pumping of blood occurs.

It is almost never that a fibrillating human heart stops fibrillating by itself, and death is the inevitable result unless it is stopped. Yet, it has been shown many times that if the incoordinate passage of impulses through the heart is blocked even for a fraction of a second, normal function of the Purkinje conducting system will return almost every time. Therefore, various methods of stopping the incoordinate passage of impulses have been employed. First, it was found that injection of potassium solution into the fibrillating heart would stop the fibrillation, and subsequent injection of calcium solution or epinephrine would then restore a normal rhythm[10]. This method, however, was rarely, if ever, found to work in the human being. Second, it has been found that procaine and procaine derivatives (notably pronestyl) can depress conduction of impulses in the heart to such an extent that the incoordinate passage of impulses through the heart may cease and a normal rhythm be restored[11]. Yet, it is very difficult to give drugs to the fibrillating heart, for they cannot be infused throughout the heart musculature without flow of blood in the coronaries, which does not occur during fibrillation. Therefore, the third method for stopping fibrillation has proved to be by far the most successful from both laboratory and clinical points of view; this method depends on electrical countershock to stop the passage of fibrillating impulses.

When a **very strong** electrical current is passed momentarily through the heart so that all muscle fibers are stimulated at the same time, this throws the entire heart into a so-called "refractory state," which means that none of the fibers can conduct impulses for a subsequent interval of approximately two-tenths of a second. Therefore, the fibrillation impulses, having no place in the heart muscle where they can continue their self-propagation, must die out. This leaves the ventricles without any impulses for several seconds, during which time the ventricles repose in complete standstill. Following this short period of rest, impulses begin once again to pass from the auricles into the Purkinje conducting system of the ventricles, and normal beat of the heart is restored immediately.

It is interesting to note that weaker currents than those used for defibrillation will actually cause fibrillation instead of stopping it because weaker currents stimulate one part of the heart fibers rather than all of them at once.

If a strong countershock is applied to the heart within the first minute after fibrillation begins, the heart will resume almost normal force of contraction as well as normal rhythm. However, during fibrillation the heart actually contracts more rapidly than it does during normal beats, and the muscle becomes very much fatigued, this fatigue being greatly exacerbated by the fact that total coronary ischemia exists during fibrillation. Therefore, if more than a minute lapses between the onset of fibrillation and the countershock, the heart beat may be too weak to sustain life. Intravenous or intracardiac injection of approximately one-hundredth milligram of epinephrine per kilogram body weight will greatly aid the sustaining power of the cardiac beat, but when the heart has been in fibrillation as long as one and one-half to two minutes before countershock, even this will often fail. In such event, it becomes necessary to open the chest and hand-pump the heart. This will restore coronary circulation, and after a few minutes a countershock can usually restore normal heart function provided that the heart had not remained in fibrillation more than five minutes before hand-pumping was begun[12]. However, once hand-pumping is started, the countershock for defibrillation may be delayed as long as forty-five minutes.

Countershock therapy was first employed in the laboratory by placing the electrodes directly on the two sides of the heart in open-chested animals[13, 14]. Also, a few animals were defibrillated using electrodes placed on each side of the chest externally, but it was concluded that the voltages necessary for through-the-chest defibrillation would be too dangerous for use on the human being. Therefore, to date electrical defibrillation of the human heart has been effected in all cases by opening the chest for direct application of the electrodes[6-8, 15, 16]. Yet, during the last year, experiments in our laboratory have indicated that through-the-chest defibrillatory voltages do not need to be exhorbitant, and what is actually needed is good electrical contact of large electrodes with the chest and very high current flow rather than very high voltage[17]. Also, it has been found that a duration of countershock of approximately one to two-tenths of a second gives optimal defibrillation; special electronic timers have been built to control this time interval very accurately. Applying the results of our experiments to practical defibrillation, one dog was defibrillated 130 times without opening the chest and without damaging the spinal cord with the strong electrical shocks. Even then the dog was alive and in good condition at the end of the experiment. Therefore, we have concluded that electrical defibrillation, when applied soon after fibrillation begins and when applied properly, is almost universally successful.

Judging from dog experiments designed for the study of intra-chest defibrillation, 110 volts alternating current at approximately 4 amperes, when applied to approximately three inch electrodes tightly compressed to the two sides of the heart, should be an effective stimulus for defibrillation in the human being almost every time. For through-the-chest defibrillation, approximately 440 volts at 30 to 60 amperes, applied to five inch anterior and posterior electrodes well saturated with electrode paste or concentrated salt solution should be a universally effective stimulus.

In any instance of circulatory arrest, one of the limiting factors in recovery is ischemic damage to the brain. It has been found in lower animals (and clinical experience indicates that this datum applies to human beings as well) that total ischemia of the brain may occur for as long as three minutes without causing any permanent damage[18]. However, as the duration of circulatory arrest continues beyond three minutes, progressive degrees of neuronal destruction occur until eight minutes of total ischemia causes permanent and total loss of cortical function. Fifteen minutes of total ischemia usually causes destruction of the hindbrain autonomic and respiratory centers so that continuanceof life becomes impossible.

SUMMARY

A discussion of the methods of resuscitation in respiratory and circulatory arrest has been presented. This has included a resumé of the important physiological principles involved in the application of simple artificial respiration, the pulmotor, the Drinker respirator, and electrophrenic respiration. Also discussed have been: hand-pumping of the heart for cardiac arrest, elevation of the patient to an upright position for relief of air embolus in the heart, and electrical defibrillation of the heart. The suggestions for treatment of air embolus and for electrical defibrillation of the heart are based on animal experiments performed in this laboratory.

REFERENCES

1. Fisher H. E.: Resuscitation, Medical Physics, Volume 1, p. 1241, Year Book Publisher, Chicago, 1944.
2. Sarnoff, S. J., Hardenbergh, E., and Whittenberger, J. L.: Electrophrenic Respiration, Am. J. Physiol. 155: 1, 1948.
3. Sarnoff, S. J., Hardenbergh, J. L.: Electrophrenic Respiration, Science 108: 482, 1948.
4. Whittenberger, J. L., Sarnoff, S. J., and Hardenbergh, E.: Electrophrenic Respiration. II. Its Use in Man, J. Clin. Investigation 28: 124, 1949.
5. Sarnoff, S. J. Whittenberger, J. L., and Hardenbergh, E.: Electrophrenic Respiration. III. Mechanism of the Inhibition of Spontaneous Respiration, Am. J. Physiol. 155: 203, 1948.
6. Beck, C. S.: Resuscitation for Cardiac Standstill and Ventricular Fibrillation Occurring During Operation, Am. J. Surg. 54: 273, 1941.
7. Beck, C. S., Pritchard, W. H., and Feil, H. S.: Ventricular Fibrillation of Long Duration Abolished by Electric Shock, J. Am. Med. Assoc. 135: 985, 1947.
8. Beck, C. S., and Rand, H. J., III: Cardiac Arrest During Anesthesia and Surgery, J. Am. Med. Assoc. 141: 1230, 1949.
9. Wiggin, S. C., Saunders, P., and Small, G. A.: Resuscitation, New Eng. J. Med. 241: 370, 1949.
10. Hooker, D. .R: On Recovery of the Heart in Electric Shock, Am. J. Physiol. 91: 305, 1929.
11. Lampson, R. S., Schaeffer, W. C., and Lincoln, J. R.: Acute Circulatory Arrest from Ventricular Fibrillation for Twenty-seven Minutes, with Complete Recovery, J. Am. Med. Assoc. 137: 1575, 1948.
12. Wiggers, C. J.: Cardiac Massage Followed by Countershock in Revival of Mammalian Ventricles from Fibrillation Due to Coronary Occlusion, Am. J. Physiol. 116: 161, 1936.
13. Hooker, D. R., Kouwenhoven, W. B., and Langworthy, O. R.: Electrical Resuscitation of the Fibrillating Heart, Am. J. Physiol. 103: 444, 1933.
14. Ferris, L. P., King, B. G., Spence, P. W., and Williams, H. B.: Effect of Electric Shock on the Heart, Electrical Engineering 55: 498, 1936.
15. Wiggers, C. J.: The Physiologic Basis for Cardiac Resuscitation from Ventricular Fibrillation. Am. Heart J. 20: 413, 1940.
16. Southworth, J. L., McKusick, V. A., Peirce, E. C., and Rawson, F. L.: Ventricular Fibrillation Precipitated by Cardiac Catheterization. Complete Recovery of the Patient after Forty-five minutes, J. Am. Med. Assoc. 143: 717, 1950.
17. Guyton, A. C., and Satterfield, J.: Factors Concerned in Electrical Defibrillation of the Heart. To Be Published.
18. Weinberger, L. M., Gibbon, M. H., and Gibbon, J. H., Jr.: Temporary Arrest of the Circulation to the Central Nervous System, Physiologic Effects, Arch. Neurol. and Psychiat. 43: 615-634, 1940.

DISCUSSION

DR. LEE R. REID (Jackson)—The practical application of proved medical discoveries has unfortunately lagged far behind medical research. It is a pity that we are not always able to apply our medical knowledge.

From a practical standpoint discussion of respiratory resuscitation should be divided into two parts. First, resuscitation at the operating table and second, resuscitation of a patient with respiratory arrest due to medical or accidental etiology, such as polio or drowning.

In respiratory failure during operation there is usually need for artificial respiration of only a few minutes duration before the usual cause, namely an overdose of anesthesia or drugs, has been corrected. This presents a vastly different problem from the patient, say with polio, where the need for mechanical respiration may exist even for months.

Respiratory failure during surgery is rather common in comparison with cardiac arrest. Here I want to put in a word for intratracheal anesthesia. With an intratracheal tube in place it is very easy to give artificial respiration by pressure on the anesthesia bag. This type of respiration must not be carried out for over an hour or so because increase in pressure within the chest compresses the large veins and reduces the cardiac output. As mentioned before though artificial respiration at the operating table is required only for a few minutes and a few squeezes on the bag will be sufficient. Without the intratracheal tube in place, a tight face mask and pressure on the bag will usually suffice. In case neither is available and open ether anesthesia is being used mouth to mouth respiration and chest compression measures are available.

Some fancy respirators where the anesthetic bag is mechanically compressed have been described by Crafoord of Sweden and Mautz in Ohio. These are better used in cases in which the chest is open, and thus a prolonged high positive intrathoracic pressure impossible.

As far as drugs go in failure of respiration at the operating table there is little use for them if mechanical artificial respiration can be carried out.

In regard to stimulation of the phrenic nerves or electrophrenic respiration Sarnoff has shown that it comes nearer to being normal respiration than any other method. This is true even if only one phrenic nerve is stimulated. In acute bulbar poliomyelitis it is indicated principally to combat the irregular respiration seen in that disease and he believes that it can be used to an advantage to supplement other forms of artificial respiration such as the tank method. Within seconds after the phrenics are stimulated all natural respiratory impulses stop.

Perhaps the most dramatic and terrifying experience in the operating room is sudden cardiac arrest. Fortunately it is rare. Some cases could be saved but as a matter of fact few are. This is due principally to one thing, namely the time element. It has been repeatedly demonstrated that the cerebral cortex can survive anoxia for a period of only three minutes without damage. As the time increases the damage does also, and chance of mere survival rapidly decreases. After much more than three to seven minutes a life may be saved but the patient becoms an invertebrate vegetable.

By the time the anesthetist or surgeon discovers the absence of pulse and a search for a palpable pulse is made the blood pressure checked once or twice to make sure there really isn't a blood pressure present, probably two minutes have gone by. Even rapid opening of the chest and cardiac compression applied requires considerable time and the chances of re-establishing cerebral circulation within three minutes is negligible.

A most important element is the time consumed in the surgeon making up his mind to slash open the chest of his patient. It is a hard decision to make and we cannot blame him for hesitating. Suppose the heart is really still beating, and we all during chest surgery have seen hearts actually beating without a palpable pulse or blood pressure, even if he has studied up on the technique of how to compress the heart, the chances are that he hesitates to open the pleural cavity through an unsterile skin. In the back of his mind lurks the knowledge that he may have to explain his opening of a chest to grief-stricken relatives, and if he is mistaken and finds that the heart is still beating it will be extremely hard to justify his actions to them or for that matter to his colleagues.

I frankly believe that the average surgeon will refuse to open a chest because of the reasons I have just given. I can't help but feel that since complete cardiac arrest is not always present when the pulse and blood pressure is unobtainable and we have all seen cases in which both are reported absent by the anesthetist for a minute or so before they reappear. A general surgeon cannot be expected to be too eager to open the chest. I confine my remarks to opening the chest because most agree that this is by far the most effective method of cardiac compression.

Faced with all the above one can readily see how important Dr. Guyton's contribution is. I believe it will be possible to have some practical application made along this line. Suppose an operating room was equipped and his apparatus kept sterile and handy. If a cardiac arrest occurred it would be simple to apply the electrodes, plug in the wire and produce the shock through the unbroken skin. No surgeon would hesitate a second to do this, and lives would undoubtedly be saved.

Treatment of Pruritus Ani with Kutapressin

Wallace Marshall, M. D.
Two Rivers, Wisconsin

OUR RESEARCH with this most irritating and troublesome dermatological condition was based upon an entirely empirical formula. Our group had been studying the effects of a special fraction of liver extract, kutapressin (R)* and its effects upon various skin diseases[1, 2, 3]. We have employed this material in various types of skin disorders, along with its use in various peripheral vascular diseases[4] with interesting results. Additional papers on these topics will be presented as further data are gathered.

Pruritus ani is a most distressing symptom to both patient and physician. The latter many times finds himself at wit's end trying to discover a method which will give his patient adequate and lasting relief. Needless to say, the patient, on the other hand, will give his physician his maximum gratitude for any permanent relief which he can bring to him.

We shall not concern ourselves with those cases of pruritus ani which are caused by various sytemic diseases, such as gout, diabetes, intestinal parasites, fungi, or the various neoplasms. Rather, this short discussion will be confined to the type of pruritus ani which is associated with neurocirculatory instability and exhaustion, for the correction of the former disabilities usually ameliorates the rectal itching which may run concomitantly with such disorders. Not so is the latter type of pruritus ani. In such cases, the ingenuity of the doctor is taxed to the utmost in finding a palliative, or better still, a real curative agent for such a bothersome clinical syndrome.

Many sundry local and topical applications of various oils and ointments have been in vogue throughout the years. X-ray therapy has been advocated, along with tatooing and nerve injections of the involved areas. Some dermatologists have even advocated the tying of the patient's hands to the bed during sleep and also filing the patient's fingernails to the minimum in order to avoid the trauma of scratching the irritated skin areas. Such latter methods are as efficacious, in this writer's opinion, as asking the patient to stop breathing. The unpleasantness of pruritus ani is so extreme that only those who have experienced this revolting condition can realize the unrest and the great irritability which this condition can and does produce[4].

During the course of our research, we have used kutapressin (R) on sixteen cases of the neurocirculatory type of pruritus ani. Each case received a comprehensive physical examination, fasting blood sugar determination, and stool examination (the latter done on a heated microscopic stage) to rule out systemic causes of pruritus ani. The possible presence of occult blood was checked routinely as a help in ruling out the possibility of a cancerous condition, especially if anorrhexia and fatigue were present. Gastric analysis was done to rule out the presence of achlorhydria. A complete x-ray study, with barium by mouth and rectum, when indicated, completed our studies.

Seven typical cases of pruritus ani (neurocirculatory type) are summarized below. Each treatment consisted of the administration of one cubic centimeter of kutapressin (R) which was given subcutaneously in the deltoid region of the arms. This material is practically painless when given in this manner. In one severe case, each treatment was administered daily, and the treatments were spread as improvement became evident.

To date, we have experienced no failures with this method. But since no one therapeutic régime can be considered as perfect, we deem it worthy of reporting at this time. Only time and the further evaluation of this method by other observers will finally establish the merits, along with the deficiencies, of our therapeutic suggestions for this highly distressing malady.

---

*Manufactured by the Kremers-Urban Company, Milwaukee, Wis.

REFERENCES

1. Marshall, W. and Schadeberg, W.: A study of keloids and related conditions. Wis. M. J. 49:369 (May) 1950.
2. Marshall, W.: A consideration of keloids. Indian M. J. of Venereal Diseases and Dermatology 16:89 (July-Spt.) 1950.
3. Ibid: Etiology and injection treatment of keloids and skin papillomas. Medical Times, 79:222, 1951.
4. Ibid: The experimental therapy of Raynaud's and Buerger's diseases with Kutapressin. Accepted for publication in the American Journal of Surery.
5. Becker, S. W. and Obermayer, M. D.: Modern Dermatology and Syphilogy. P. 172, Phila, 1941, J. B. Lippincott Company.

Bank of Two Rivers Building.

Summary of Cases of Pruritus Ani Treated with Kutapressin

Initials	Age	Sex	Duration	Prev. Therapy	No. Inject Kutapressin	Results
C. K.	37	M	2 years	Various salves and lotions. Electrocautery.	14	Marked relief to date (6 weeks after last inj.)
J. R.	26	M	each winter for 5 years.	Sitz baths, lotions and salves.	3	Rapid relief. No itching at present time.
B. E.	47	F	2 months	Ultra-violet and salves.	7	Relief following first treatment. No symptoms remain.
R. T.	32	M	Sore, itching anus for 2 months	Various topical medications. No relief.	6	Progressively better with each inj. Completely clear at this time.
A. R.	55	M	Raw rectum, intense itching for 3 years.	Many salves, lotions, tatooing of rectum elsewhere.	16	First inject. gave marked relief. Well for over a year without recurrence.
G. N.-	19	M	Off and on for 2 years.	Salves of all types.	3	Rapid and progressive relief.
V. A.	22	F	I week.	None	2	No symptoms following last injection 3 weeks ago.

Pitfalls in Gyencology*

GLEN T. PEARSON, M. D.
Hattiesburg, Miss.

SUCH HAS been written in textbooks and the literature concerning the care of the gynecologic patient, and most authors stress certain contraindications and precautions. However, the warning notes are sometimes faint, or perhaps they may be ignored because of enthusiasm for the subject under consideration. Progress is desirable and necessary, but at times it is best served by re-evaluation of acquired knowledge, assessing it in the light of experience for weak spots or areas of danger. It is the purpose of this presentation to draw attention to some of the pitfalls which lie in the path of physicians who treat gynecologic patients. The discussion is divided into two parts under **Office Gynecology** and **Surgery**, although several procedures are common to both.

Office Gynecology

Omission of rectal and rectovaginal examination. Failure to carry out this phase of the pelvic examination will prevent discovery of an occasional enterocele. It may also result in embarrassment over a pelvic laparotomy for removal of a cul-de-sac mass which is found, upon opening the abdomen, to be a large rectal polyp. Performance of rectal and rectovaginal examination as a matter of routine will improve the examiner's skill in interpreting rectal findings when vaginal examination cannot be carried out, and will result in the occasional early diagnosis of carcinoma of the rectum.

Cauterizing or coning the cervix without first doing biopsy—Cauterization with the actual cautery or conization with the electrosurgical unit destroys the only tissue from which early diagnosis of carcinoma of the cervix can be made. If a cervix appears sufficiently abnormal to warrant cauterization it deserves biopsy, especially in view of the fact that carcinoma in situ has been shown to occur occasionally in a normal-appearing cervix. Since neither cauterization nor conization can be considered curative even for the earliest carcinoma, these procedures should not be employed without first excising tissue for biopsy. The E. S. U. loop should not be used for this purpose, because the resulting coagulation and distortion of cellular structure may render accurate interpretation by the pathologist difficult. Exception may be made in obvious postpartal eversion or erosion of the cervix, when it is known that no cervical disease existed prior to delivery.

---

*Read before the Section on Obstetrics and Gynecology at the eighty-third annual session of the Mississipp State Medical Association, Biloxi, Miss., May 15, 1951.

Postponement of biopsy of the cervix. If there is any reason to suspect that the cervix might harbor carcinoma, it should be biopsied. The only time one can be certain of the opportunity for biopsy is while looking at the cervix. There is no assurance that the patient will return as advised in three or four weeks for re-examination and biopsy if the "erosion" has failed to regress during therapeutic trial. Such a cervix may not be visualized again until six months or a year later, and by that time the "erosion" may be fungating and metastasizing. It may be well to remember that when this particular pitfall snares the physician it kills the patient.

Inadequate biopsy. Great responsibility is thrust upon the pathologist when he is asked to state, without equivocation, whether evidence of malignant change exists in a tiny piece of tissue submitted for his examination. This responsibility becomes well-nigh unbearable when the specimen consists largely of clotted blood and a small tag of mucosa. Tissue may be obtained either with a scalpel or with biopsy forceps. If the scalpel is used a triangular wedge of tissue should be cleanly excised. The apex of the wedge should extend into normal cervical tissue. When using biopsy forceps firm counter-traction should be applied to the cervix with a single-tooth tenaculum to prevent the lip of the cervix slipping away from the jaws of the forceps, resulting in the collection of only a scrap of mucosa. Tissue should be removed from the most abnormal-appearing area and from at least one other site, preferably at the line of demarcation between normal and abnormal tissue. The scalpel offers the advantage of greater ease in getting this line of demarcation, and also the line of transition from squamous to columnar epithelium, which is the point of origin of most cervical malignant new growths. A more radical method of biopsy is the coning of the cervix with the scalpel. Although this method is not very adaptable to office procedure it is gaining favor, and a special scalpel blade has been devised for this purpose. Any bleeding encountered during biopsy usually is readily controlled with an oxycel sponge and a small gauze pack (to be removed by the patient next day).

Reliance on the cytologic smear for diagnosis of cancer. This does not as yet concern most of us so much as it does those working near a university or medical center. However, use of the cytologic smear is increasing, and the usefulness of this procedure should be recognized and evaluated. Schaffey and associates[1] state that they have knowledge of hysterectomies which were performed largely, if not solely, because of a single positive vaginal smear. Since false positive smears are not at all uncommon this practice does not appear to be justified. The cytologic smear probably will have its greatest usefulness as a screening procedure to select candidates for biopsy, especially in mass survey methods as employed by cancer detection clinics. As more gynecologists and pathologists become familiar with its technic, the cytologic smear should find its proper place as a diagnostic adjunct.

Instrumentation of the cervix in the presence of pelvic inflammatory disease. Passage of probes or sounds, or cauterization of the cervix may cause acute exacerbation of quiescent pelvic inflammatory disease. Tubal insufflation and hysterosalpingography present the same hazard, and in addition that of peritonitis resulting from sudden extrusion of infectious material from the tubes into the peritoneal cavity. Clinical course of the patient and pelvic examination do not furnish dependable criteria for determining the point at which such procedures become relatively safe. A normal erythrocyte sedimentation rate is the only reliable standard, and it should be a prerequisite even after all signs and symptoms have disappeared and other laboratory findings have returned to normal.

Cauterization or conization of the cervix in a patient past the menopause. The sequence of events following this procedure usually includes cicatricial stenosis of the cervix followed by pyometra. If the patient is not postmenopausal, but menstruates irregularly or scantily, and exhibits other signs and symptoms of the approaching climacteric, cauterization or conization should not be done. Permanent cessation of menstrual flow shortly afterward might deprive the cervix of periodic physiologic dilatation, permitting stenosis to take place in spite of mechanical dilatation during the follow-up treatment. Trachelorrhaphy or amputation of the cervix are preferable for such patients.

Instrumentation of the cervix in the presence of unsuspected early pregnancy. In order to avoid this complication instrumentation of the cervix should be carried out, if possible, during the first four or five days after completion of a menstrual period. The same precaution is applicable to diagnostic tubal insufflation and hysterosalpingography, but these procedures should not be carried out less than two days after menstruation ceases because of the additional danger of embolism. This danger will be minimized by use of carbon dioxide for insufflation and an intravenous preparation of radiopaque material for hysterosalpingography. Therapeutic insufflation should be done on the day preceding the estimated date of ovulation.

As a general rule, any instrumentation or manipulation, if done during the first half of the menstrual cycle, is unlikely to interfere in the development of a recently implanted ovum. Precautions cannot be abandoned during sterility studies, for conception may occur during such studies. It is not a rare occurrence for a pregnant woman to falsify her recent menstrual history and present misleading complaints in the hope of obtaining any sort of treatment which might interrupt her pregnancy. Considerable alertness may be necessary to detect these individuals, some of whom are quite clever.

Indiscriminate hormone therapy. Estrogen should be given with caution, if at all, in the following conditions:[2] (1) Premenopausal menstrual irregularity. Such use of estrogen may cause increased bleeding, prolong menopausal emotional aberrations and mask bleeding from fundal carcinoma. (2) Residual endometriosis after castration. Estrogen may cause reactivation of quiescent peritoneal implants, with recrudescence of symptoms. (3) Definite carcinoma background. While it has never been proved that estrogen can produce carcinoma in the human, and it is hardly possible to administer it in dosage proportionate to that which has been found to produce it in mice, it is known to exert a stimulation effect on the existing cancer. Thus it does not seem wise to indiscriminately administer estrogen to a woman who may have inherited a marked tendency to develop carcinoma. (4) Palpable tumors. Since estrogen stimulates growth of both uterus and breasts, presence of palpable tumors in either of these structures calls for caution in its use. (5) Hepatic insufficiency. Steroid hormones are inactivated by the liver, and should not be given in the presence of advanced hepatic disease. (6) Senility. Many physicians prescribe estrogen for various conditions involving senile changes. This may cause endometrial hyperplasia, and result in bleeding which necessitates curettage to rule out carcinoma of the fundus. Zeman and Davids,[3] in a series of 34 cases of benign endometrial bleeding submitted to dilatation and curettage, found six cases due to hormone administration.

Testosterone is frequently used to inhabit pituitary-ovarian function in functional bleeding, mild ovarian cystic disease, premenstrual tension and cystic mastitis. It should be given in diminishing dosage and for a limited time only, since both its therapeutic effects and side effects are cumulative.[4] Overdosage produces arrhenomimetic symptoms, beginning with oiliness of skin and acne, followed by hypertrichosis, deepening of the voice and enlargement of the clitoris. Only the first two are always completely reversible, and testosterone therapy should be sharply tapered off or discontinued when they appear.

SURGERY

Polak[5] has said, "It is from our failures that we learn our shortcomings and our lessons." This is true, but one need not wait for individual attention from grim experience. Much may be learned by the sharing of experiences, and by studying the mistakes and failures of others. At the outset, in discussing gynecologic surgery, it seems worth mentioning that probably in no other field of surgery are so many unnecessary operations performed.

Inadequate preoperative and postoperative care. In its fundamental concepts gynecologic surgery does not differ from any other type of surgery, and many of its pitfalls are identical with those of general surgery.[6] This is especially true in the field of preoperative and postoperative treatment. Careful attention should be directed to nutrition, the respiratory system, cardiovascular status, hepatic and renal function, body fluids and electrolyte balance. Generous use of the antibiotics and sulfonamides is indicated both before and after surgery in the presence of infection; here, again, the sedimentation rate is the best guide in determining the most propitious time for surgery in elective cases. The hemoglobin should not be below seventy per cent at the time of elective surgery, and blood transfusion should be employed as needed to maintain blood volume, hemoglobin and erythrocyte count at or near normal values. Postoperative deep-breathing, frequent turning in bed, active and passive exercise of the extremities and early ambulation help prevent vascular complications and speed recovery.

Reliance upon "miracle drugs" to compensate for poor preoperative preparation or careless technic. There may be a tendency at times to think that the antibiotics and sulfonamides will correct almost any mistake, including poor preparation, septic technic and poor judgment in selecting cases for surgery. A recent study of gynecologic mortality by Marshall and Macer[7] indicates that infection still causes approximately forty per cent of postoperative deaths in elective cases. This should dispel any attitude of complacency toward infection.

Omission of dilatation and curettage before hysterectomy for abnormal bleeding. Bleeding may originate from intracervical or endometrial polyps, or pyometra (especially in the aged). D. and C. in such instances usually will yield a ready diagnosis. It will often show that a simpler, safer procedure than hysterectomy will suffice, and occasionally it in itself is curative. In addition, it will inform the operator whether he is dealing with carcinoma of the fundus, and for this reason any woman with postmenopausal bleeding should have benefit of curettage.

Perforation of the uterus during dilatation and curettage. Retroflexion and the changes of pregnancy make the uterus especially susceptible to perforation. Many a surgeon has introduced a probe or curette through the cervix, only to have it pass smoothly upward without encountering perceptible resistance, until he reluctantly realizes that the fundus has been violated. The only safeguards are to carefully determine by bimanual palpation the position of the uterus before inserting any instrument, and to grasp the probe or curette very lightly in the fingertips for better perception of the meager resistance offered by the uterine wall. This also tends to prevent heavy and forceful curetting.

Multiple elective operations in the presence of infection. Morbidity is increased by prolonging surgery unnecessarily, and by protracted handling of the abdominal viscera. When infection is present surgery should be largely restricted to that which is necessary, and additional elective procedures omitted. There is considerable difference of opinion regarding elective appendectomy in such instances. Since the appendix is so often the site of inflammatory changes secondary to pelvic infection it appears logical that it should be removed at the time of pelvic laparotomy, unless other factors make further extension of operating time unwise.

Speed for speed's sake. The day of the surgeon who takes greater pride in his operative speed than in his end results has passed. Improvement in anesthesia, preoperative care and understanding of physiology have made surgery much safer for the patient than heretofore. In most instances there is no need for the surgeon to rush through an operation obsessed with the idea of its early termination. Speed for speed's sake should be replaced by careful, smooth technic which wastes no time.

Failure to recognize injury or bladder, ureter or bowel during hysterectomy. In reviewing a series of 2820 hysterectomies of all types at the University of Iowa Mengert and Stoltz[8] found 12 injuries of the bladder, 10 of one or both ureters and 12 of the bowel, for a combined incidence of 1.2 per cent. Since this series was taken from a teaching institution it presumably represents better results than those from the country at large. Such injuries are everyday possibilities, and close attention to detail is necessary to prevent them. There has been an apparent increase in the incidence of vesicovaginal fistula following hysterectomy in recent years, because of the spreading employment of the total operation and decline of the supracervical method. Adequate freeing and downward displacement of the bladder will lessen the danger of injury to it, and also to the ureters, by relaxing tension on them and increasing the distance between them and the cervix. The ureters should be identified if there is distortion of pelvic anatomic relationships, or doubt regarding their location. Clamps should be placed close to the cervix and parallel to it. Packing the intestines away from the pelvis, and use of Trendelenberg position will minimize danger to the bowel. However, the cardinal sin is not injuring these organs, as serious as that may be, but in failing to recognize the injury at the time it is inflicted and repair it before closing the abdomen.

Failure to observe medico-legal precautions. Written permission should be obtained from both the husband and wife for any procedure of primary intent which would mutilate, drastically alter physiologic processes, prevent future pregnancy or interrupt an existing pregnancy for therapeutic reasons. In addition, it is wise to have a written concurring opinion of a colleague before performing such an operation.

Surgery in the psychoneurotic. It has been estimated[9] that in two-thirds of all patients emotional factors play at least a contributory role in producing illness. If this is correct, it seems reasonable to assume that it would be true of an even greater proportion of the patients in a gynecologic practice. Every physician is familiar with the miserable, maladjusted woman whose somatic symptoms are the result of her psychoneurotic tendencies.[10] This woman will readily accept surgery as the possible solution for her problems; indeed, she is likely to make the suggestion herself. Caution is indispensable in this situation. Many such patients are not helped by surgery; many are harmed by it. Even when there is a demonstrable lesion amenable to surgery it is best to tread softly here. The advice of a psychiatrist should be sought before subjecting one of these patients to surgery, especially if there is evidence of depression.

Summary and Conclusion

Some of the pitfalls encountered in the practice of gynecology have been mentioned and briefly discussed. It is hoped that the thoughts projected here may stimulate further critical consideration of the gynecologist's armamentarium. A plea is made for alertness in the approach to the patient and her problems. The most treacherous pitfall encountered is the attitude of intellectual lethargy which excuses the omission of an accurate gynecologic history and a careful pelvic examination on the basis of a crowded waiting room. The average busy physician may find it difficult to perform the numerous pelvic examinations necessary to avoid the dangers that have been discussed however, if he will survey his practice and note the proportion of gynecologic patients, he might gladly rearrange his time, facilities and personnel to give them better care.

REFERENCES

1. Schaffey, L. C., Rakoff, A. E. and Hoffman, J.: An evaluation of the Cytology Test for Uterine Cancer, Am. J. Obst. and Gynec. 55: 453 Mar., 1948.
2. Kimbrough, R. A. and Israel, S. L.: The Use and Abuse of Estrogen, J.A.M.A. 138: 1216 Dec. 25, 1948.
3. Zeman, F. D. and Davids, A. M.: Gynecologic Surgery in the Elderly with Special Reference to Risks and Results, Am. J. Obst. and Gynec. 56: 440 Sept., 1948.
4. Rakoff, A. E.: The Use and Misuse of Hormones in Obstetrics and Gynecology, J. Med. Soc. N. J. 45: 278 June, 1948.
5. Polak and Tollefson: Gynecological Transactions. 53: 170 (1928).
6. Schloss, S. A.: Preoperative Preparation of the Gynecologic Patient. Ohio State Med. J. 45: 1183 Dec., 1949.
7. Marshall, H. K. and Macer, G.: Gynecologic Mortality Lessons. Western J. Surg., Obst. and Gynec. 57: 365 Aug., 1949.
8. Mengert, W. F. and Stoltz, R.: Total Abdominal Hysterectomy. Am. J. Obst. and Gynec. 49: 603 May, 1945.
9. Weiss, E. and English, O. S.: Psychosomatic Medicine. Phila., W. P. Saunders Co. 1944.
10. Burditt, J. N.: Conservative Gynecologic Surgery. Tex. St. Med. J. 45: 759 Nov., 1949.

Academy of General Practice

The scientific assembly of the Mississippi Academy of General Medicine will meet September 19 and 20 in Jackson, Miss., at the Heidelberg Hotel. Dr. John B. Howell of Canton is president. He is one of the outstanding doctors of this state.

Outstanding men of the nation are on this program, to offer a fine post-graduate course for the general practitioner. The Academy of General Practice is serving a great purpose. It is serving well to bring up the efficiency batting average of the general man and it is also helping him to be recognized as he should be. We congratulate the officers of the assembly on securing such a fine program.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton .... Oxford
President
Dr. J. G. Thompson .... Jackson
President-elect
Dr. T. M. Dye .... Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. .... President
Greenville, Miss.
H. T. Smith .... President-elect
McGehee, Ark.
L. T. Carl, M.D. .... Vice-President
Jackson, Miss.
D. T. Owens, M.D. .... Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. .... Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

EDITORIALS

OUR REAL WEALTH

Our good friend, Dr. Jere Crook, came out recently with a most interesting discourse on the usefulness of men and women past 70 years of age. Dr. Jere is one of them. He is pushing on toward his fourscore and has the exuberancy of a youth. He keeps mentally and physically fit and he is very active in the practice of surgery. Dr. Crook refers to an article by Dr. Martin Gumpert in the **New York Times** of recent date carrying the title, "A Second Prime of Life—After 70." Excerpts of this article along with Dr. Crook's comments are thought provoking and bring to our mind problems, opportunities and new approaches to responsibilities.

Dr. Gumpert cited men and women between 77 and 91 who are now living, active and successful in different fields of human endeavor. Vittoria Emanuele Orlando who is the only surviving prime minister who sat at the Peace of Versailles, is very active at 91, is a member of a law firm, works ten hours per day. Dr. Bastianelli is a surgeon of international note and is going strong at 87. The same may be said of the popular and beloved Dr. Erdman of New York City and the Dean of the Surgical World, Dr. Rudolph Matas of New Orleans, now 91. Bernard Berenson, the art historian, is now 86 and active. George Santayana, 87, a philosopher, has just published a new book. Dr. Crook and Dr. Gumpert name numbers of men and women past seventy-five who are very active and very useful. It is quite certain that age is not measured by years altogether. When Christ came life expectancy was around 20 years; a hundred years ago it was 40, but now 68, or 70 for women.

The man who keeps mentally and physically fit with a spirit alert and responsive to human needs is not old in the sense we have thought. He is our most useful citizen. This type of man past 70 has the knowledge and the wisdom to enrich our nation. It has not been appreciated nor utilized as it should have been. Failing to utilize this asset of human civilization is like building a barn, filling it full of corn and leaving off the top, like keeping a flock of sheep and allowing them to shed their wool instead of shearing it and selling it at a dollar a pound.

Pediatrics is a specialty and a great one, geriatrics likewise should be. Many more doctors will soon be needed to take care of the added population due to increased longevity. In our national economy the knowledge, the wisdom and the spiritual powers of our men and women past 70 years should be utilized as a precious and valuable heritage. How much longer shall we be negligent and foolish?

News and Comment

STUDENT AMERICAN MEDICAL ASSOCIATION

We medical students at the University of Mississippi appreciate this opportunity to express ourselves from time to time in the publication of the practising clinicians of our state. We feel that you are interested in our activities and that the practitioners are entitled to know what we are doing preparatory to joining your ranks. One of the most constructive, but belated, moves that has been made recently in the nation's med schools is the organization of a Student American Medical Association. As the name indicates, this organization is being sponsored by the AMA, the parent association assuming an intelligent hands-off policy in the affairs of the students. To be sure, many of the high ideals of our seniors have been inherited by us in our constitution and by-laws and our attitudes, and objectives regarding the controversial topics of the day are compatible, but these similarities are of our own premeditated choice.

Last December 28 and 29 representatives of 47 medical schools from all over the nation met in the headquarters offices of the A.M.A., 535 N. Dearborn St., Chicago, the expressed purpose of drafting a constitution for the organizing of a Student A.M.A. The University of Mississippi was ably represented by Sterling Battee who is now taking his clinical years at the University of Tennessee at Memphis. The prompt ratification of the constitution and early organization of a local association by the students here at the University was largely due to the efficient work by Sterling and to him belongs much of the credit for our initial success. While we are passing out bouquets it would be ungrateful not to mention the generous and enthusiastic assistance of Dr. Billy S. Guyton.

At our first scheduled meeting early in March we elected the following officers to serve a tenure of one school year:

James C. Griffin, Jr., of Shannon, Miss., president.

Gordon S. McHenry, of McHenry, Miss., vice-president.

Gussie Higgins (Miss), of Jackson, Miss., secretary.

Jack Witchen, of Pascagoula, Miss., treasurer.

Our newly elected president, with the aid of Dr. Guyton, energetically went about securing a suitable speaker for our first formal meeting. This requirement was appropriately met in the person of Dr. W. H. Anderson, of Booneville, who presented us with a very entertaining and enlightening talk on the opportunities and satisfaction of practising in Mississippi. This meeting was held on the evening of May 4 in accord with our plan to meet on the first Friday of each month. The second meeting was held on June 8 and was for the special purpose of hearing recordings of speeches on the topic of socialized medicine in England and the United States, courtesy of Dr. Billy Guyton. At our July meeting we were happy to have Dr. J. K. Avent, of Grenada.

Advisors for our group are Drs. J. P. Wall, Jackson, (State Advisor), C. A. McLarty (Regional), D. S. Pankratz, A. C. Guyton, and C. M. Murry (Faculty) all of Oxford.

Carl G. Nichols, Jr., Reporter

EXTERNSHIPS WANTED

As a part of the objectives of the Student American Medical Association to contribute to the welfare and education of its members, the society at the University of Mississippi undertook to investigate the opportunities afforded in the various hospitals and clinics throughout the state for externships. After having completed the first two years of medicine our students who do not transfer immediately are confronted with a lay-out period of from three to six months, depending on their place and date of transfer. This is an "ugly duckling" stage in our training in which we must either seek gainful employment outside the medical profession or starve. Although a half a year of digging ditches might well improve our character it is doubtful that it will add much to our mental stature, and since character is a quality in which all medical students are supposedly already heavily endowed, we throw ourselves at your feet.

Writing to all of the institutions in the Magnolia State is a mighty undertaking for reasonably busy students but we did inquire by correspondence with forty-four of them. To the eleven who provide externships we extend our heartfelt thanks. To the nine who desire more information we stand ready. To the twenty-four who do not provide externships nor desire more information . . .

Those institutions providing externships offer periods of employment ranging from three months to one year and require that the student have completed the first two years of medicine. They offer stipends of from $50.00 to more than $200.00 per month plus room, board, and laundry. The scale of remuneration may vary with the students individual needs since many of us are married. Since it is not practical for us to write the kind of letter that we think your dignity deserves to every hospital or clinic in the state we would like to suggest that you advise us of any possible employment with you. You may address any correspondence to Dr. Pankratz and it will be replied to by us. If your stipend is small it is nonetheless likely to be accepted by some student whose home is nearby. We do not anticipate great wealth although we must be practical as well as ambitious.

You may expect this of us. Our only possible gain from such an unremunerative adventure is knowledge. We want to learn to do things. We should have adequate background enough to answer some of the **whys** of medicine, but we want to know some of the **hows**. After a reasonable orientation the average student can be useful to you. He is willing to work if you will show him what to do and give him the confidence to do it.

Carl G. Nichols, Jr., Reporter
University of Mississippi Student A.M.A.

BOOK REVIEWS

Review of Physiological Chemistry, by Harold A. Harper, Ph. D., Prof. Biology (Biochemistry), University of San Francisco, Lecturer in Surgery, University of California School of Medicine, Director, Biochemistry Laboratory, St. Mary's Hospital, San Francisco. Published by University Medical Publishers, P. O. Box 761, Palo Alto, California. Price $3.50.

This third edition of Review of Physiological Chemistry is published that the student or physician preparing for state and specialty boards can keep abreast of this rapidly expanding branch of medicine. With the advent of such a vast number of new pharmaceuticals demanding knowledge of biochemistry far beyond the past generation doctor ever dreamed, such a book as Review of Physiological Chemistry fills an urgent need.

The book is prepared in concise form with easy reference to the information desired. Chemical formulas, changes that occur in blood chemistry, glandular function, and body tissues are carefully and methodically listed for ready consideration. The book has a full table of contents and complete index.

Odyssey of Modern Drug Research is a beautifully arranged and printed book commemorating the opening of the new Upjohn pharmaceutical manufacturing plant which has just been completed. In lovely color plates it tells the story of the development of the newer drugs and the role that pharmaceutical companies play in the field of medicine.

The book is interesting, informative, and appropriate for the physician's book shelf.

Fractures, Dislocations and Sprains, by John Albert Key, B.S., M.D., Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; Associate Surgeon, Barnes, Children's, and Jewish Hospitals, St. Louis, Mo.; and H. Earle Conwell, M.D., F.A.C.S., Associate Professor of Orthopaedic Surgery, University of Alabama School of Medicine; Chief of the Orthopaedic Service, South Highland Infirmary; Attending Orthopaedic Surgeon, Children's Hospital, Jefferson-Hillman Hospital, East End Memorial Hospital, and St. Vincent's Hospital, Birmingham, Ala. Published by the C. V. Mosby Company, St. Louis, Mo., 1232 pages. Price $16.00.

The Management of Fractures, Dislocations, and Sprains, in its fifth edition, comes to the man in general practice with as much value as it does to the orthopedic surgeon. The book has been revised, less valuable plates deleted and many new illustrations printed for illustration of new methods. Especially noteworthy are the chapters on medullary fixation of fractures of the femur and the tibia.

Perhaps no book is available to the man in general practice that more completely answers his daily needs in the management of fractures than does this Key and Conwell baedeker. So frequently illustrated is the text with drawings and photographs, and so concise is the diction concerning method and technique, the surgeon can follow without fear of blind difficulties. It is the lot of the man in general practice to handle many of these fractures near the scene of injury, due to our automobile age, mechanical farming, and industrial plants located in rural communities.

The Management of Fractures, Dislocations, and Sprains is an excellent reference volume that is safe, clear, and ready.

ANNOUNCEMENTS

Walter H. Simmons, M.D., announces the association of Ross F. Bass, M.D., in the practice of Obstetrics and Gynecology, and the removal of offices to 733 North State Street, Jackson 2, Miss.

Ralph C. Bethea, M.D., and Lawrence N. Bellew, M. D., announce their association for the practice of Gynecology and Obstetrics. Located at 27 North Cleveland Street, Memphis, Tenn.

STATE BOARD OF HEALTH

FELIX J. UNDERWOOD, M.D.

In reporting activities for the biennial period, July 1949 to July 1951, Dr. Boswell reflects that the total deaths from tuberculosis in the state in the beginning year of the Sanatorium were estimated at 3,000. In 1950, this had been reduced to 558. This decline has been steady since 1921. The Sanatorium took care of a capacity load of well over 400 patients during the past two years. When buildings now under construction are opened, the capacity will be increased to 600.

The present improvement in the tuberculosis picture is due in large measure to the coordinated efforts of the state and county health departments, improved living conditions and economics of the people, and an excellent educational program in which many agencies have participated.

An interesting thing that has happened in the past four or five years has been the moving up of tuberculosis incidence and deaths to the upper age groups. For many years there existed a long waiting list for entrance into the Sanatorium, made up primarily of young people—girls and boys of high school and college ages. At present the waiting list is shorter than at any period in the history of the institution, and it has been possible to admit most cases immediately. At the close of the biennium, there were only forty-seven white men and five white women on the waiting list, none of whom are acceptable patients to the institution for the reason of advanced age or advanced disease. In admitting such cases, about the only thing that could be achieved would be isolating them from their families and providing nursing and domiciliary care for the remainder of their lives. While this might be an important step in preventing spread of the disease, there is not sufficient bed space to take the risk of taking them in and then have to decline admittance to young people, should there be an upsurge in incidence.

A very gratifying achievement of the current biennium has been the completion of a 164 bed hospital for Negroes, expanding the bed capacity for this group to 204. The tuberculosis incidence decreased rapidly among the Negro population; however, the Negro is more than twice as susceptible to the disease as the white person and once he contracts it, its course is more progressive and fatal. The Negro is much slower to apply for hospitalization and treatment than the white person and few of them will go into an institution and stay there for any length of time. Most of the letters and telephone calls regarding admission for Negro patients come from white people interested in seeing them have this protection and care.

The new building is modern and attractive, and it had been hoped to staff it with Negro physicians; however, the results to date have been disappointing, since there was not even the courtesy of a reply from the Negro physicians approached. White physicians are therefore being trained to take over the operation of this unit.

The Vocational Rehabilitation program, a cooperative program between the Sanatorium, the Vocational Division of the State Department of Education, and the Mississippi Tuberculosis Association, was started in 1943. This program proposes to rehabilitate those patients who recover from tuberculosis but are unable to return to their former jobs. The program has been expanded so that patients still taking treatment can be given training if they are physically able to take it. This has proved to be a very fine program and many are learning useful trades whereby they can support themselves and their families on returning home.

In addition to the Vocational Rehabilitation work, another department which has meant much to Sanatorium patients is its Educational Department. The Mississippi Legislature during the 1946 session made a special appropriation to establish facilities to provide educational opportunity to elementary and high school students of educable school age. An educational director was secured and began organizing the program in July 1946. Less than a year after the program was started a student was graduated with her class in high school. Work done in this school is accredited by the State Department of Education and credits are transferrable to other schools of the state. Anyone who wants to take advantage of the educational courses, including those past school age and those who have not learned to read or write, are permitted to do so. The Vocational Therapy Department deserves mention here for it gives the patients a certain amount of training and furnishes them something to do while lying in bed. Being so occupied prevents them from becoming morose or melancholic and is of tremendous value in helping to keep them satisfied for a sufficient length of time to get well.

The Laboratory and X-ray departments of the Sanatorium have carried an unusual load during the past two years, modern medicine requiring as it does an increasing amount of such work for diagnosing and treating conditions other than tuberculosis. An out-patient department has been maintained, where the medical profession can refer cases for diagnosis and advice. Much service is rendered to physicians the year round in the interpretation of x-ray films which they refer.

The Preventorium, where the undernourished, underprivileged children can be taken in and be rebuilt and taught good health habits, has long been the pride of the Sanatorium and the State of Mississippi in its preventive program. It is supported by civic clubs over the State to help expand its benefits to additional children and it has received national recognition. There is no question but that the Preventorium has contributed much to the welfare of the children which have come under its care, many of them having reached maturity by now and leading useful lives in their respective communities.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

Presentation of Case

HISTORY: This 48-year-old colored man was admitted to the VA Hospital, Jackson, Miss., because of ascites and pedal edema. About 3 months ago, patient first noticed swelling of the feet followed one month later by abdominal swelling, which gradually increased, until he was enormously distended. Patient admitted heavy consumption of alcohol during the past three years, but had had no previous complaint, no shortness of breath, or chest pain. Twice in the past year, he had had blood in his urine. Patient was dull and lethargic and his information, therfore, did not appear reliable or complete.

Physicial Examination: Patient was a well developed and nourished man with hugely distended abdomen, which on palpation showed a fluid wave, but no masses. There was one pitting edema of both lower extremities. No jaundice was present. The heart was enlarged with blowing systolic murmur. The lungs were normal. BP 212/110; pulse 94; Temp. 98.6.

Laboratory Data: Urine: clear, acid; Sp. Gr. 1009 to 1010, Alb. neg. 3-8 WBC; 2-4 RBC; many bacteria. — **CBC:** HB. 6.5 gm.; RBC 2,280,000; neg. — **Chemistry:** BUN 108; Creatinine, 7.0; Ict. Ind 3; Serum protein, total 5.6; thymol turbidity 6; Cephalin Floc. 1 — **X-ray:** heart enlarged; diaphragm elevated; some fluid in left lung base. — **EKG:** Normal. — **Venous pressure:** 240 mm. water. — **Circulation time** (arm to tongue): 23 sec.

Course: There was a progressive downhill course with episodes of confusion, when patient wandered from the ward. Treatment consisted of vatamins, elixir choline, and methionine. Three days after admission a paracentesis was performed and 2,500 cc. of clear, strawberry colored fluid were removed with a protein of 3.8% and a cell county of 290,000 RBC, 60 lymphs, and 40 polys. A Papanicolaou stain revealed some hyperchromatic cells and mitotic figures indicating possible malignancy. After the parencentesis the BP was lowered to 170/98. Two weeks later, the abdomen had filled up again and 4000 cc. of similar fluid were withdrawn. On the 22nd day, there was a turn for the worse with a generalized clonic ocnvulsion and subsequently, muscle twitching over the entire body was present constantly. BP 140/98, pulse 160. Catherization become necessary, while previously there was no difficulty in voiding. Intravenous fluid was given without improvement. Patient lapsed into coma and died 24 days after admission.

Abstract of Discussion

Dr. J. F. Busey found it difficult to reconcile all signs with a single disease process. The assumption of a hepatic cirrhosis causing ascites, as suggested by the history of alcoholism, was not confirmed by liver function tests. Nor was congestive failure on the basis of the slight cardiac enlargement, increased venous pressure and circulation time, a likely possibility due to the disproportionately larger interpreted as apparent changes. The possibility of malignancy in the pancreatic region with encroachment on the portal and caval circulation may well have been the explanation of the ascites and pedal edema. An inquiry by Dr. J. A. Gallogly as to a possible urinous nature of the ascites indicative of a urinary fistula was answered in the negative. Dr. R. C. Bailey considered the possibility of urological conditions causing azotemia, which could result only from simultaneous impairment of both kidneys by obstruction of the lower urinary tract such as prostatic hypertrophy. Dr. B. S. Oxman considered a renal tumor explaining the hematuria and aggravating an azotemia due to nephrosclerosis.

Anatomical Diagnosis

(Hans N. Naumann, M. D.)

1. Prostatic hypertrophy, marked; urethral obstruction; hydronephrosis and hydroureters, bilateral, severe; hypertrophy of bladder.
2. Arteriolar nephrosclerosis, marked; uremia.
3. Solitary cyst, right kidney, large; obstruction, portal vein and inferior vena cava; ascites, marked; edema of legs.
4. Cardiac hypertrophy, left ventricle, moderate.
5. Degenerative changes, islands of Langerhans in pancreas.

Postmortem chemistry in cerebrospinal fluid: Glucose not increased; Urea 257 mg%; Creatinine 6.9 mg%; Acetone negative.

PEDIATRICS

LOCAL PARALYSIS IN CHILDREN AFTER INJECTIONS, J. K. Martin, Guy's and Evelina Hospitals, London, England. Arch. Dis. Childhood 25:1-13, March 1950.

"Seventeen children are described in whom paralysis of a single limb occurred within 28 days of receiving an injection. Of these, 15 followed immunization and two, penicillin. The records of a further 60 to 70 similar cases have been used to provide information not clearly brought out in the shorter series. Cases in which injection preceded paralysis by more than 28 days have been excluded. All were under three years og age, the average being one year. The youngest child was seven months. In 39 other cases occurring between 1941 and 1949 in whom the ages were known, the average was 4½ years and ranged from nine to 14 years. Girls were slightly more frequently affected than boys. The average time between the injection and the onset of the paralysis was 16 years. The majority occurred between seven and 21 days. The shortest interval was three days and the longest 26 days.

"Analysis of the patients' histories showed that, without exception, constitutional disturbances either preceded or were present at the onset of the paralysis. Nine children had a history of fretfulness, lethargy, loss of appetite, or fever one to four days before becoming paralyzed. In the remaining eight an upper respiratory infection, fever, or fretfulness occurred at some time following inoculation. Neck rigidity was found in four and fever in five patients seen at the time of onset. The paralysis was frequently in the arm or leg in which the injection was given. The onset was sudden, with a flaccid paralysis of the whole limb as a rule, but often sparing the fingers and toes.

"There appeared to be no relationship between the substance inoculated and the paralysis. Materials used included A.P.T., pertussis vaccine alone or combined, and T.A.F. Two cases followed penicillin given as treatment for boils and stomatitis, respectively. The material injected was produced by at least six different manufacturers. Cases occurred after the first, second, or third immunizing dose. No local reactions occurred in this series.

"Cases such as these two have been described by others. There is suggestive evidence that these cases occur chiefly when and where there is a high prevalence of poliomyelitis. Other facts pointing to poliomyelitis are the constitutional symptoms, the changes in the cerebro-spinal fluid, and the seasonal incidence. The cerebro-spinal fluid was examined in seven cases. The changes included a raised cell count and serum protein level. It is concluded that there is a case for considering the suspension of immunization during an outbreak of poliomyelitis."

COMMENT: This is one among many recent

articles on this same subject, which is of great interest to the medical profession as a whole, as well as to our public health departments. While we were attending the meeting of the AMA in Atlantic City, it was our privilege to hear a more or less round table discussion on this same subject before the section on Pediatrics of the AMA. I consider this a far reaching and in some instances serious affect because it places the physician in a very anxious position to say the least of it. There are cases in which he is confronted that makes it necessary for him to make a decision as to when and when not to give inoculations or injections of any and all types. You know, it has been the custom of the State Health Department for many years to make it mandatory that children shall be inoculated and vaccinated before entering school. It is, therefore, going to be necessary for the health departments to make some definite decision about this immediately. The New York Board of Health as well as the New York City Board of Health have stopped giving the inoculations for the entire summer. We have virtually done the same thing in our practice here, at the Children's Clinic, and yet we are confronted at times with emergencies where we think it is absolutely necessary to give an inoculation or a vaccination against tetanus, and as a matter of fact, we consider tetanus much more serious than polio, and rather than take a chance on it, we had rather take a chance on polio. After all, in most instances, inoculations are more or less of an elective nature, and I see only a little liability in postponing the administration of such preventive measures until far along in October; therefore it is going to be our policy to follow that course in most instances.

Is The Unknown Spread of Polio Exclusively Via Single Cow or Small Herd Milk?

DR. MARSH PITZMAN
St. Louis, Missouri

EVER SINCE polio made its surprising upsurge during the nineties — and its startling increase till say 1920—thoughtful practitioners have been most suspicious that in some mysterious way this was related to the milk from single cows or small herds. The reason for this belief is obvious, as historically polio was almost exclusively a rural, small-town or suburban disease. These areas as a generalization did not, and do not enjoy the advantage of large pasteurizing dairies.

Because of the incidence of polio is just exactly the reverse of most other definitely known contagious diseases, most thoughtful earlier students of the problem doubted or disbelieved the contagious-infectious theory. And this doubt still persists among outstanding researchers and practitioners.

The fact is that in spite of the greatest medical research project ever attempted that the only three epidemics ever traced to a common source were via milk supply of small herds. Many strong suspicions and substantial evidence in earlier reports suggest that spread is **exclusively** via milk.

But small-town practitioner Dingman, assisted by top notch researchers, in 1916 was the first to prove a specific, definite example. Dr. Dingman stoutly maintained the commonsense practitioner viewpoint, "I simply report the facts and refuse to pass judgment on whether this is an extraordinary coincidence, or a common or even exclusive method of spread, which has been overlooked."

This evidence is strongly reinforced by the almost universally admitted fact that infants exclusively on mother's breast—or the various increasingly popular evaporated milk formulas—are never attacked by polio. To physicians I surely do not have to emphasize how extra-susceptible even husky infants are to our definitely known contagious-infectious diseases, to wit, impetigo, whooping cough, measles, chicken-pox and mumps for examples.

Let me point out that this evidence regarding milk supplies was submitted for the record by outstanding practitioners and researchers of the pre-virus years. And emphasize that it has been universally concurred in by so far as I know all present-day believers in the virus theory of polio. By some it has been strongly reinforced.

The only important addition I make to Dr. Dingman's report is to suggest another possibility, which may also have been overlooked. Specifically during July and particularly August—our worst pasture months throughout the northern three-quarters of our U. S. A.—average country cows graze poisonous weeds. Then the milk from single cows or small herds may become dangerous to humans, which is the generally recognized cause of white snake-root poisoning. Obviously other diseases, including mysterious and justly dreaded polio, might well be caused by the grazing of other poisonous weeds.

For reasons detailed in book and numerous open letters, the poison most strongly suspected is the widespread jimson weed (datura stramonii). As is generally known by physicians its poisonous action is due to an admixture of atropine and hyoscine alkaloids; which in overdose produce **both** fever and muscular paralysis, and in fatal overdose a terminal respiratory paralysis.

The alkaloidal poisons contained in the jimson weed produce both fever and paralysis, when absorbed in sufficient quantity by human body fluids. This weed is relished by average country cows during droughts.

Milk, cream, ice-cream and butter from larger dairies are "practically always safe" he declared. "Well-fed dairy cows refuse to eat poison weeds and in larger dairies the milk from hundreds of cows from separate herds is mixed in large vats; thus, even if some cows do nibble at weeds, diluting (the milk) well below any probable danger point."

It is also observed that overdosing with datura by the Indian medicine men had caused numerous deaths and permanent paralyses (The Ethnobotany Of The Tewa Indians, Bulletin 55, Bureau of American Ethnology, c/o Smithsonian Institute, Washington 25, D. C.)

Recently our Journal American Medical Assn. carried a note of interest and encouragement to me (Vol. 145, Feb. 25, 1951, page 605) "Many substances ingested by the mother may appear in the breast milk, opiates, atropine, etc." Evidently the oldtime belief is still the generally accepted one and the doctrine of probabilities is strongly in favor of what is true of the nursing mother is also true of the lactating cow.

I have never been able to locate a chemical verification of this belief and as summarized in my book (pages 60-62 and page 114, 2nd paragraph), I failed ignominiously in finding the chemicals atropine or hyoscine in cow's milk, cream or butter. Even when cows had been fed tremendous quantities of jimson weed, or these alkaloids had been injected hypodermatically in overwhelming dosage. In such a conflict between highbrow research and old fashioned common sense, my personal vote is decidedly in favor of common sense.

Medical researchers concede no method of prevention of infantile paralysis is known. Which currently makes this simple plausible theory the only ray of optimistic hope for potential victims.

Researchers should make a full and public test and give due attention to the seasonal nature of the epidemics. Specialists have been so completely blinded by the virus theory of Dr. Simon Flexner that they refuse to investigate other theories.

6 Kingsbury Place

Woman's Auxiliary

OFFICERS

President	Mrs. George W. Owen	Jackson
President-Elect	Mrs. Richard Clark	Hattiesburg
First Vice-President	Mrs. W. H. Anderson	Booneville
Second Vice-President	Mrs. Willard Waldron	Jackson
Third Vice-President	Mrs. I. C. Huggins	Jackson
Recording Secretary	Mrs. C. C. Hightower	Hattiesburg
Treasurer	Mrs. J. D. Simmons	Cleveland
Parliamentarian	Mrs. V. B. Philpot	Holly Springs
Corresponding Secretary	Mrs. P. R. Greaves	Jackson

COMMITTEE CHAIRMEN

Program	Mrs. T. A. Baines	Jackson
Research and Romance of Medicine	Mrs. I. J. Newton	Greenville
Legislation	Mrs. J. G. Thompson	Jackson
Doctor's Day	Mrs. L. J. Clark	Vicksburg
Preventorium	Mrs. Henry Boswell	Sanatorium
Today's Health	Mrs. S. L. Bailey	Kosciusko
Nurse Recruitment	Mrs. S. B. McIlwain	Pascagoula
History and Archives	Mrs. Harvey Garrison, Sr.	Jackson
Revisions	Mrs. J. R. Williams	Houston
Budget	Mrs. Stanley Hill	Corinth
Memorial	Mrs. Joe Rogers	Oxford

COUNCILORS

First District	Mrs. George Archer	Greenville
Second District	Mrs. R. L. Wyatt	Holly Springs

Third District	Mrs. A. E. Brown	Columbus
Fourth District	Mrs. J. K. Avent	Grenada
Fifth District	Mrs. H. C. Ricks	Jackson
Sixth District	Mrs. Guy Vise	Meridian
Seventh District	Mrs. C. R. Jenkins	Laurel
Eighth District	Mrs. R. B. Zeller	Hazlehurst
Ninth District	Mrs. M. M. Snelling	Gulfport

PRESIDENT'S MESSAGE

We, as members of our state Auxiliary, are members of a fast-growing, enthusiastic national Auxiliary which has come to be looked upon with ever-increasing pride and dependency by our medical profession.

In 1950 there was an increase in membership of 4,000 women and this year nearly 4,000, bringing the total to 57, 547 members of the Woman's Auxiliary.

To be eligible for membership is a privilege extended to us by our husbands who are members in good standing in the American Medical Association. Our responsibilities as doctors' wives are greater, both to our families and to our communities, because of the nature of our husbands' business.

We in Mississippi have fallen down in membership this year. I believe this is because we haven't seen the importance of united effort and haven't realized that we as Auxiliary members, with even small endeavors, can take credit for the big things that have been accomplished by the Medical Association, because we are its Auxiliary, a part of it.

Informed women are interested women, so I believe if we met more often, discussed the work and problems, both of the Auxiliary and the medical profession, in regard to health education, and being a two-way street between our husbands and our neighbors and communities, we will find a challenge to join forces with other women all over America who are doing the same thing.

Let us try to interest every doctor's wife in joining the Auxiliary, just as her husband joins his society, and together we will stand united, ready to help if we are needed.

Mrs. Owen Launches Busy Program

At the first executive board meeting of the new auxiliary year, on August 3, Mrs. George W. Owen, President, presented a full agenda for the months ahead. This meeting was held at the Robert E. Lee Hotel with most of the members of the executive board present.

A plan to have the presidents of local auxiliaries to come together for exchange of ideas and discussion of methods was perhaps the most important promotion agreed upon by the group. The state president will assume responsibility for such a conference at an early date.

The board also approved a definite set-up for sponsoring a nurse's scholarship, for which there is a fund of $200 in the treasury to start this project. It was moved that a committee be appointed to draft requirements for applicants and for putting the plan into operation.

The historian, Mrs. Harvey F. Garrison, Sr., requested that each auxiliary over the state adopt as a local project the writing of its own history.

As a public relations project, Mrs. Owen suggested that the film, "Self-Examination of the Breast," be shown in every auxiliary also. The film may be obtained from the national office, 535 N. Dearborn, Chicago.

A resolution was passed recommending that in sections where distance and where population favor breaking up large auxiliary groups, that smaller units be formed. A smaller unit can solicit many doctors' wives who have not been attending the district meetings, can arrange more frequent meetings, and can function more effectively. The resolution was passed with the sole purpose of solving unwieldy situations and reaching every doctor's wife for auxiliary membership.

Recognition was given Mrs. J. K. Avent of Grenada, a state past-president, who was made national chairman of "Today's Health." Special emphasis should be given subscriptions to this health magazine this year.

After refreshing iced drinks and cookies, the meeting adjourned.

Auxiliary to the American Medical Association

President—Mrs. F. Wahlquist, 129 West 48th Street, Minneapolis, Minn.

President-Elect—Mrs. Ralph Eusden, 4360 Myrtle Avenue, Long Beach, Calif.

First Vice-President—Mrs. Lee Schaeffer, 700 Highland, Salina, Kansas.

Second Vice-President—Mrs. Mason G. Lawson, 200 Ridgeway, Little Rock, Ark.

Third Vice-President—Mrs. Herbert W. Johnson, 714 Grand Avenue, Everett, Wash.

Fourth Vice-President—Mrs. Jay G. Linn, 36 Altadena Drive, Pittsburgh 28, Pa.

Treasurer—Mrs. George Turner, 3009 Silver Street, El Paso, Texas.

Executive Secretary—Miss Margaret N. Wolfe, 535 North Dearborn St., Chicago 10, Ill.

Deaths

DR. D. L. HARPER

Dr. D. L. Harper, prominent Meridian retired physician, died at Riley's Hospital on June 29. He had been a Meridian resident since 1943, but ill health several years ago forced his retirement.

Dr. Harper practiced many years at Stonewall where friends termed him the section's greatest friend to man — and to the ill. His membership was in the First Baptist Church in Meridian.

Dr. Harper was educated at the University of Alabama, where he received his degree in 1906.

Surviving are his wife, Mrs. Eula Carter Harper, Meridian; two daughters, Mrs. H. L. Hutcherson, Jackson; Mrs. D. H. Moore, Meridian; five grandchildren; a sister, Mrs. R. F. Williams, Enterprise; two brothers, E. O. Harper, Quitman; T. J. Harper, Enterprise, several nieces and nephews.

DR. BURTON L. ROBINSON

Funeral arrangements were being completed in Meridian Sunday for Dr. Burton L. Robinson, son of Mrs. J. B. Furr of Meridian, and the late Dr. L. L. Robinson, whose death May 4 brought to an abrupt end the promising career of a young Meridian physician-surgeon. Dr. Robinson had been stricken some weeks ago with meningitis and apparently had been on the road to recovery when an unexpected cerebral hemorrhage caused his death.

He had spent two weeks in the Oschner Clinic in New Orleans and had gone to a veteran's hospital for convalescent treatment. Dr. Robinson saw service as a Navy medical man in World War II and until a year ago had been medical officer of the 153rd Fighter Squadron, Mississippi Air National Guard, at Meridian. In late spring of last year, he had moved to Edna, Tex., to take up private practice there.

Dr. Robinson is survived by his wife, Mrs. Polly Walker Robinson of Edna, Tex.; mother, Mrs. Furr of Meridian; brother, Dr. Brewster C. Robinson of Tulare, Calif., and a sister, Mrs. Maida Kirby of San Antonio, Tex.

DR. WILLIAM H. EASON

Services for Dr. William Henry Eason, Tupelo, who died May 11 in North Mississippi Community Hospital, were held in the W. G. Pegues Funeral Home. The Rev. Guy Lord, pastor of First Methodist Church, Tupelo, officiated, assisted by the Rev. Raymond Keys, pastor of First Christian Church.

Dr. Eason was on the North Mississippi Community Hospital medical staff. Born at Coldwater, Miss., he was the son of the late W. H. Eason. Before coming to Tupelo, he practiced medicine in Potts Camp. He resided in Tupelo thirty years.

He was graduated from the University of Tennessee School of Medicine in Memphis, then did graduate work at Tulane University and at Howard Medical College.

Dr. Eason was a Methodist. He served as steward 29 years. He also was a 32nd Degree Mason and a Shriner.

He leaves his wife, Mrs. Joyner Green Eason of Potts Camp, a daughter, Mrs. Dan H. Wylie of Potts Camp, and two sisters, Mrs. Emma Hall and Mrs. Betty Allen, both of Memphis.

I. C. OF S.

The sixteenth annual session of the International College of Surgeons is scheduled to meet in Chicago on September 10-13, inclusive. The able, versatile and popular Dr. Herbert Acuff of Knoxville, Tenn., is president of the college. Dr. Acuff is not only very able in the field of surgery, but he has a great heart, cordial hand, and a deep and sincere human interest. The presidency of this great International College of Surgeons was well bestowed upon him.

For Sale

100 MA Westinghouse Diagnostic X-ray Machine. Splendid Condition, $1800.00 Cash. Dr. Nelson Long, Selma, Alabama.

The Differential Diagnosis of Deafness in Young Children*

HELMER R. MYKLEBUST
Evanston, Ill.

Chairman: We appreciate kindness of Dr. Myklebust in staying over today to continue his discussion on the subject "Differential Diagnosis of Deafness in Young Children."

(Taken from Teletype Notes)

Dr. Helmer R. Myklebust: Gentlemen, I am very happy to have an opportunity to be with you today. In yesterday's discussion we were concerned with the problem of how the child's behavior, which we call clinical observation, is helpful to the otologist in determining whether the child is a deaf child or whether the child's lack of response to sound is due to emotional disorder, aphasia or mental deficiency. In other words, the first question is, is he a deaf child or is he one of the other types. It probably is the greatest source of error diagnostically in this area at this time. You will recall that we stated that in addition to clinical observation, there are two other steps in making a differential diagnosis of deafness in a young child, approximately between the ages of 1 to 6. These are history taking and clinical examination.

The first one we have is the history. The history which we will discuss is one we have used for ten years and it consists of sections or major areas of inquiry. The first one is birth and prenatal history. We go into the conditions existing during pregnancy, the illnesses, false alarms, length of pregnancy and unusual conditions attending birth, type of birth, anesthetic used, and whether it was a forceps delivery. The infant's condition in early life is an important follow-up on the other information. Were there any scars or bruises? The reason for going into these conditions is to determine, if we can, whether we have organic reasons for deafness or of central nervous system damage. These conditions do cause, we find, anoxia. The forceps injury kind of difficulty also can cause cochlear hemorrhage and can bring about reduction in hearing due to the peripheral injury. It obviously also can cause central nervous system damage, too. Seizures in early life are indicative of damage.

The second area is the history of an illness. We have a long list of illnesses such as measles, whooping cough, scarlet fever, mumps, et cetera. The history must cover carefully the child's illness because often we find that the illness is different from what it was thought to be at the time. In other words, the child had a measles attack but the measles encephalitis was not recognized and diagnosed at the time. Probably the child was not even seen by a doctor. It is not uncommon that the illness might not be severe. Two diseases which are frequently difficult to find, to follow, to know, because the child is probably not even sick, are encephalitis and meningitis. It becomes necessary to do the diagnosis of encephalitis and meningitis in retrospect. We have motor coordination tests which are highly helpful in diagnosing meningitis in retrospect.

The next area is genetic development. It is necessary to go into genetic development. We get information such as when the child first sat alone (average 6 months); when the child first walked alone (average around one year); when the child first ate with a spoon (average about 24 months); at what age he first ate with a fork, and so on. Does the child prefer the use of the right hand or left hand? There is a scale available through the Educational Test Bureau Office in Memphis which gives the standardization ages at which different genetic developments occur. The genetic development is important because the deaf child is only slightly retarded in his genetic characteristics. If the genetic development is seriously retarded, it is suspected that the problem is not deafness, but other complicating factors.

The next area is personal adjustment. Then we ask questions such as (you will find we want now to get the cooperation from parents) Is this child responsive to people? Does he look at people? Does he play with people? Is he primarily responsive to objects and not to people? Is he especially alert to movements? Is he sensitive to vibration, sensitive to being touched? Is he highly distracted and hyperactive? The deaf child is, the aphasic is not. Does the child eat well and sleep well? Make his wants known? Does he sob and shed tears when he cries? The aphasic child does not sob and shed tears in a normal manner. The deaf child does. Does he have tantrums? Does he kick his feet and cry and show emotion? If he does, then the probabilities are good, in other words it is the problem of deafness which is most likely to be present.

---

*Read before the Section on Eye, Ear, Nose and Throat at the eighty-third annual session of the Mississippi State Medical Association, May 16, 1951, Biloxi, Miss.

For a short history of auditory behavior, ask such questions as Does this child respond to sounds? If the mother says the child does respond to sounds, but only to sounds like airplanes, horns on cars, loud noises, this is consistent with deafness. But if the mother says there is no response, you ask "Does the child hear you, does he ever pay attention?" Then the mother says "Well you know, this child. you just can't tell. Sometimes he does and sometimes he doesn't." Intermittent response to sounds is not characteristic to deafness, but to other kinds of disorder, characteristic of the aphasic child. Does he respond to sound of human voices, doorbells, and other noises like that in the home environment consistently?

Now we have the child paying attention to a sound in the foreground, jingling of a bell. Then we make another sound which comes in and fills in the background. Do you get him to pay attention to the background sound? In normal function you only hear what is in the foreground by keeping out what is in the background. This can be done where the hearing is normal. With an auditory perceptive disturbance you can not. This is characteristic of central nervous system disorders and is not characteristic of the deaf child.

The next area is his language behavior. Language behavior means just about what it says. That is, did the child babble? As far as we know, aphasic children do not babble. The mentally deficient child does babble. In comparison with high grade-low grade animal life, the lower animals do not babble and human beings do. Do deaf children babble? The evidence in history and clinical experience we have is that they babble normally up to 6-8 months of age. Watch for it. Does this child use gestures? Does he unexpectedly understand a word and follow it out? The aphasic child will and so will a mentally disturbed and mentally deficient child. The deaf child will not. Does he unexpectedly produce a word all at once out of the blue? It obviously means he heard the word or he would not have learned the word.

You take the history according to the problem presented by the child. You check what is pertinent. It is not at all uncommon to do this history and get the evidence you need in ten minutes or less. Check the pertinent items. I want to emphasize that you take the time to discuss all of these points. The history should be done by the doctor. These people are not going to talk to your secretary about these unfortunate items which are so painful. They want to talk to the doctor. We not only take the history and do the clinical observation, but we also do the clinical examination simultaneously, with emphasis on this point while working with the child. What the mother and father, and usually it is the mother, doesn't tell you becomes highly important. You have to analyze why they don't tell you while trying to give the good side.

Clinical Examination—We have a history of the child's response to loud sounds, which suggests deafness, and can observe the behavior which is characteristic of the deaf child. Where do we go from here? We are confronted with problems and questions such as, How deaf is this child? Very important question. Should he use a hearing aid? Countless other questions which we will not mention or go into here but I will take the liberty here to say that I have tried very hard in this little book for parents to answer these questions. When does auditory training apply? Also, on your reading list is an article called "The Differential Diagnosis of Deafness in Young Children" in publication, J. of Exceptional Children, 1950-51. We can't go into the question of examination until we consider the question of equipment. What equipment must we have? Now, you don't need a lot of equipment to do the differential diagnosis of deafness in a deaf child. I should like to say that the trained clinician can do this diagnosis very accurately without equipment. It is entirely possible. Work with deaf children for a while and with the clinician's frame of mind, and you will not need electronic equipment as such. You need a good voice and some means of making sounds yourself. An audiometer will be helpful and will be much more helpful along with a very little amplifier and a loud speaker. If, on this amplifier you also have a phonograph turntable it would be even more helpful. An audiometer, a little amplifier, a loud speaker, with preferably a little turntable right on top of the amplifier. What we want is this: simply a cord to attach or insert into the receiver outlet of the audiometer into the amplifier and an attachment from the speaker to the amplifier. We have the pure tones coming out of the loud speaker. You tell the child, "Put it on your ear. Tell me when you hear." This can not be done on children below 4 years of age. With this particular assembly, you turn it on, set the tone in intensity where you want it, fill the room with sounds of pure tone. Acoustic tile on the ceiling and a carpet on the floor will eliminate and reduce the sound problem in the room almost as much as expensive sound-proof equipment would. You have a room which is going to be much more usable for the free field testing. How do we know how much a child hears even if he responds in this situation? It is a highly relative question. Before we go into the making of the test, the first step is to try it on yourself, then on your secretary, and then on patients of normal hearing, all normal ears. Get the response of these people to the audiometer. You have it set. You have a little tone coming into the room. If you can't hear it, then of course turn it up and give more power. What other equipment do you need? A few little gadgets, a few little noisemakers such as little bells which are sometimes in the form of doorbells, sometimes the little bells and other instruments used in rhythm bands for children. Go into a music store to get them, cymbals, crickets, and so forth. You need a few of these noisemakers and a few of what we call sound-producing gadgets. Music stores are helpful; they have also little chimes. Strike them, which is highly definitive from a standpoint of sound. It may be necessary for you to get to an electronic shop where they have a sound analyzer. You do not need to own one. Some are available in medical schools and clinics where this kind of thing is being done. We hope that some time in the future we will have a battery of this sound equipment available. There is a noise level meter and a sound analyzer that most radio shops have. Then we can see from the meter how loud the noise is. How loud is it at four feet? At six feet? You get helpful information on how loud a sound the noisemaker you are using produces, its calibration, frequency. The common clacker runs about 250 cycles. Label your soundmakers accordingly. How loud is a tuning fork when it is struck? How loud at two inches compared to six inches? How did the otologist learn this? From clinical experience and practice in tuning fork free field test. A tuning fork can be used if you use it in a free field manner. But the use of the free field equipment which we do use is important. We are suggesting then that clinical experience with this type of equipment is going to make them much more valuable. I really have high regard for the tuning fork in the hands of men like yourselves. The tuning fork test is a highly useful instrument and in spite of much comment pro and con, particularly when used by the man who knows it, it comes up with something. If you have a phonograph turntable, turn the audiometer off, put on a record, start it going, and turn on the amplifier. You are playing sound right through the loud speaker. There is a set of records which are highly useful for this, the Dr. Tetley Audiometry Training Records. They are available from the University of Alabama Press. These records are simply different types of sound which have been recorded. You can get the pure tones recorded on the phonograph and played on the loud speaker without the audiometer. These audiometry training records of recordings of animal sounds—hogs, horses, cows, sheep, true sounds, done at the Chicago stockyards. On the other side are common everyday sounds—train, cars, etc. You play these through the loud speaker. These are highly useful for this purpose and important, that is, when you use sounds such as we have just mentioned that are social condition sounds, sounds which the child hears in everyday life, if he hears. The aphasic child may respond to these sounds beautifully; may not respond to specific sounds and field tests because pure tones are too abstract. We know that the audiotory mechanism matures just as we know the eye does. We know the child does not have vision like an adult when he is an infant. I think we can determine that he can neither hear like an adult. We measure the pure tone down to the child. I don't think a young child can respond in the same manner at all. If we use social sounds our response will be much different.

Procedures—1. We are talking about free field tests. It simply means what we have been saying. You do not expect the child to respond in a formal manner and does not apply directly to hearing but you fill the room with sound. It is a bilateral test. One more free field test in connection with this procedure is what we call speech test. One of these tests is what we call the humming test and simply consists of humming. How loud is it? You learn to use it close to the ear, back of the head, and get right up to the child, because you get a vibratory sensation. Varying the intensity of the humming test is very important. You can use names, you can use numbers, and you can, by the same clinical procedures mentioned, calibrate your own voice in intensity so that when you are so many feet from the ear you will know what intensity you are using. As you know, normal conversation is from 40-50 decibels in normal conversational situation. You can vary that considerably. You do not need a lot of equipment. You can use techniques which are highly satisfactory in evaluating values of all audiometry responses.

Now the testing goes on. We usually have a little table for children and if the child is very cooperative, 50 per cent at least are not, but if he can cooperate at all you place him in a chair at this table. You know about how loud noise is at point where child is. After the child is seated, you engage him in activity, something to play with. The best things are these little play peg sets, inserting pegs on a board. Have the mother around when working with the child. We want mothers to keep on talking. We go from child to mother. We observe, asking questions all the time. There are always noisemakers in our pockets. While the mother sits and plays with the child, snap on the audiometer and within reach vary intensity. If the child hears the sounds characteristically as the deaf child does, what does he do? He is sitting, putting pegs on something, he stops and looks at his mother. We note the cessation of activity. He may, if he is mature enough and not too apprehensive, try to find where the sound came from. The deaf child tries to do that. He tries to localize the sound. Other children respond differently to this situation. Test behavior is what we are talking about now. The test behavior is different for each of these children. The deaf child responds to the sounds when it reaches his threshold level and he does so consistently but you do not expect him to tell you that he heard. There are no instructions. You observe the child's reaction when you turn the sound on. We use the pure tone. We go into the test, turn off the audiometer and the child doesn't know what we are doing. We say to the mother, "Let us play with the child for a few minutes." We have a cricket under the table and start making noises with it. Does the child stop? Do you have cessation of activity? We have two bells of exactly the same type in each hand. The child is still working. Keep him interested. Play one bell in front of his face. As he starts to grasp for it, gradually stop the one he is going for and play the other.

I would say that about 50 per cent of children just don't respond to this kind of handling. They are going to be around in this room in a very hyperactive manner and the parents just can't stop them. Note flexibility of technique. It does not matter from what point sound testing is started, start them immediately. Let him run around the room because you have some idea of the sounds coming to him at different areas of the room. When he is squalling is a good time to test if he is a child who has ability to hear. You are sneaking in to awareness of attention. He stops crying. Cessation of activity; cessation of activity of any kind, puts you in the position of evaluating what this child is hearing. It is not necessary to have formal cooperation. On the basis of these techniques, we can arrive at four classes of hearing: 1) Hearing above conversational level. A very definitive finding. If the child has hearing above conversational level then you have determined that his lack of speech is not due to hearing impairment. It is due to something else.

2) From 40 to 60 decibels, and it means below conversational levels. You can classify this way; above conversational level, now below conversational range. This child will not learn to speak normally because his hearing impairment is too great and may be accounted for on a basis of middle ear defect. If in third class, it can not only be middle ear infection but must be also inner ear.

3) From 60 to 80 or 90 decibels, you are getting consistent response to sounds but they are very loud sounds. You can say this loss is something like 60 to 90 decibels, going probably down.

4) From 90 to 100 decibels, you find the child is not responding to sounds unless they

are intense, usually close to the ears. This is a child with very severe hearing impairment. The deafness which you encounter in the pre-speech age, deafness before the age of two, whether due to meningitis or whatever you have been able to determine, this is the kind of deafness which you encounter, the most severe bilateral nerve deafness.

If we classify the child on the basis of 1 or 2, there have been medical, educational and psychological implications. If group 1, he is not a deaf child, he is usually something else. If he is in group 2 the probability of middle ear infection is much more likely than if in class 3 or 4. Group 2 responds beautifully to therapy and the prognosis is excellent. Group 3 may have inner ear involvement or may have both middle and inner ear involvement. The child with marked deafness will respond to acoustic training. Group 3 is essentially a deaf child and is not going to be educated primarily through the ears but through the eyes.

RECOMMENDATIONS TO PARENTS

These parents must be given assurance that something can be done for their children. I don't mean you can say we are going to cure their deafness. It is essential for the doctor to say something on this order as we see it. Let the mother read letters from other parents with similar problems. Suggest some books for her to read. Tell her, "We are going to help you with your child, but you are a parent who has a handicapped child who is not easy to raise. You have to learn something about it, read something about it." Most parents want to get busy and do something. You might suggest the John Tracy course for parents. If the parent asks, "Will he ever be able to use a hearing aid?" you say, "It looks like it" or "I don't know. It is just a little heard to tell. I want to see the child again in six months." Then the mother has the feeling you want to help her. You should check the child again in six months to see results and further verify results.

I wouldn't be surprised to see that you people in this section would take the lead in differential diagnoses of deafness in young children. I should like very much to see that.

QUESTION: What is the youngest age child you know of who has been fitted with a hearing aid?

ANSWER: The youngest child that we have had a portable hearing aid on is two years. That is too young. Very unusual child. The best procedure we know of in that connection in children from 2-4 years of age, is auditory training, which can be used successfully if the hearing impairment is not too great and if it is correctly done. By that, there are a number of things we mean. Mothers must work with the child but they are not to sit down and do this work with the child every day and all day. It just doesn't seem possible to work with the child every day and not effect the emotional attitude between mother and child. After four years, everything else being done, good auditory training, audiometry stimulation, it is relatively assured that a good correctly adjusted instrument can be worn. We have had a great number of children wear them very satisfactorily.

BIBLIOGRAPHY

1. Bordley, J. E. and Hardy, W. G. A study in objective audiometry with the use of a psychogalvanometric response. Annals of Otology, Rhinology and Laryngology, Sept., 1949.
2. Bloomer, H. A. A simple method of testing the hearing of small children. Quarterly J. of Speech, Oct., 1942.
3. Crawden, G. P. Tests for children of preschool age. J. of Laryngology and Otology, 1934, pp. 247-263.
4. Dix, M. R. and Hallpike, C. S. The peep show. British Med. J., Nov., 1947.
5. Doerfler, L. G. Neurophysiological clues to auditory acuity. J. of Speech and Hearing Disorders, Sept., 1948.
6. Ewing, A. W. G. and Ewing, I. R. The ascertainment of deafness in infancy and early childhood. J. of Laryngology and Otology, Sept., 1944.
7. Froeschels, E. Testing of hearing of young children, Archives of Otolaryngology, Feb., 1946.
8. Froeschels, E. and Beebe, H. Testing hearing of newborn infants, Archives of Otolaryngology, Dec., 1946.
9. Gessell, A. and Mmatruda, C. Development Diagnosis. Hoeber, 1947.
11. Keaster, J. A quantitative method of testing the hearing of young children. J. of Speech disorders, June, 1947.
12. Marcus, R. E., Gibbs, E. L. and Gibbs, F. A, Electroencephalography in the diagnosis of hearing loss in the very young child. Diseases of the Nervous System, June, 1949.
13. Myklebust, H. R. Your Deaf Child—A Guide for Parents. C. C. Thomas, Springfield, Ill., 1950.
14. ——— The relationship between clinical psychology and audiology. J. of Speech and Hearing Disorders, June, 1949.
15. ——— The use of clinical psychological screening techniques by audiologists and speech pathologists. J. of Speech and Hearing Disorders, June, 1950.
16. ——— The differential diagnosis of deafness in young children. In publication, J. of Exceptional Children, 1950-51.
17. Utley, J. Procedures for examining very young acoustically handicapped children. Nat'l Soc. for crippled Children and Adults, Chicago, 1949.

Recent Developments in Treatment of Eye Disease *

JOSEPH B. ROGERS, M.D.
Oxford, Miss.

PATHOLOGICAL changes of a degree that might go unnoticed elsewhere in the body may lead to serious and crippling loss of function when occurring in the eye. If the consequences of these changes are to be minimized or prevented, diagnosis must be early and treatment effectively administered with careful attention to every detail.

Since it is of utmost importance for us to constantly adhere to correct therapeutic principles, I believe it would be well to review the valuable experimental work that has been done along these lines in recent years.

CHEMOTHERAPEUTIC AGENTS

Sulfonamides: As shown by Wood, the mode of action of the sulfonamide depends at least in part on preventing the utilization of para-aminobenzoic acid in the formation of substrates which are essential to the growth of certain bacteria.

It follows that the action of these drugs is impeded by the presence of pus or secretions containing large amounts of para-aminobenzoic acid and therefore it is a good idea to irrigate the conjunctiva before instillation of these drugs.

Sodium sulfacetimide 30 per cent solution appears to be the drug of choice for local sulfonamide therapy. It gives the highest concentration, the best penetration and fewer sensitivity reactions. Sulfamylon has also proved very valuable in some infections resistant to other agents and it is not inhibited by para-aminobenzoic acid.

The sulfonamides diffuse rapidly into all ocular tissues when given systemically.

Sulfadiazine remains the drug of choice for systemic therapy because of rapid absorption, fairly slow excretion and minimal toxic effects.

Toxicity may be reduced by combining the sulfonamides.

Toxic reactions are infrequent if treatment is not prolonged.

Promizole: A relatively non-toxic sulfone has proved beneficial as an adjunct to streptomycin in treating infections due to acid-fast organisms.

Para-Aminosalicylic Acid: Has also been helpful as an adjunct to streptomycin and is preferred by most workers over promizole.

Hydrosulphasol: Is a relatively new compound which has been highly recommended by industrial ophthalmologists in treating chemical and thermal eye burns. One of the most dreaded of ocular accidents is a severe alkali burn. Immediate and thorough lavage and cleansing of the fornices remains the most important step in treatment; but any drug that aids in preventing the serious sequelae is extremely welcome. No controlled studies on the effectiveness of this drug have been published.

ANTIBIOTICS

The mode of action of the antibiotics is not yet perfectly understood. Presumably they interfere with enzyme systems essential to the growth of certain bacteria and viruses.

In treating intraocular infections the ophthalmologist is faced with a unique situation. With many of these agents adequate blood levels mean nothing because the drug is not able to cross into the intraocular tissues in effective concentrations. Therefore, we must always keep in mind not only the susceptibility of the organism to the drug, but also the penetrating power of the drug and the tissue tolerances.

Penicillin: This, the oldest of the antibiotics, when given parenterally is of great value in infections of the lids and orbits, but does not penetrate the intraocular tissue in effective concentrations.

Penicillin is not stable in solution and must be kept in a refrigerator. Properly prepared and stored solutions and ointments are very effective topically in treating external ocular infections; however, they should be seldom used because of the high incidence of sensitization. Penicillin is not inactivated by pus.

Sub-conjunctival injections are capable of getting some penicillin into the aqueous, but ineffective amounts into the vitreous.

For intraocular infections, 0.1 cc. of penicillin G should be used. Penicillin K should never be used in this way.

It should be particularly stressed that penicillin solution or a combination solution of penicillin and streptomycin in normal saline should be used to refill the anterior chamber after all repairs of penetrating injuries of the globe. These cases carry a high incidence of infections and post-operative inflammation. This preventive step will in almost every instance forestall development of infections and their grievous complications.

---

*Read before the Section on Eye, Ear, Nose and Throat at the eighty-third annual session of the Mississippi State Medical Association, May 16, 1951, Biloxi, Miss.

I recently had the opportunity of testing the value of this procedure under rather extreme conditions. A small negro boy wearing darkly smoked glasses because of a bilateral purulent conjunctivitis was struck by a rock on the left eye. The lick drove a piece of glass 7 x 5 mm. into the anterior chamber. When we saw him two or three hours later, both eyes showed profuse purulent discharge. Under ether anesthesia, the glass was removed and the corneal laceration closed with three black silk sutures. The anterior chamber was irrigated and refilled with a solution containing 10,000 units of penicillin and 2500 units of streptomycin per cc. This same solution was injected subconjunctivally all around the limbus and the eye bandaged. The remainder of the solution was used to irrigate the other eye every 10 minutes while he was recovering from the anesthesia. Thirty per cent sulfacetimide was prescribed for the conjunctivitis in the uninjured eye. Two days later the patient returned with both eyes free of infection. Healing of the injured eye proceeded uneventfully.

Streptomycin: Is effective against certain gram-negative and acid-fast organisms. It is stable in solution. A concentration of 50 mg. base per cc. is recommended for local use. It does not penetrate the intact corneal epithelium, but penetrates in the presence of ulcer or disease. Streptomycin is usually the drug of choice in B. pyoscyaneous infections. Local application retards corneal healing somewhat. Organisms tend to become rapidly resistant to streptomycin.

For systemic effect the drug must be given parenterally and when given in this way does not penetrate the ocular tissues well. It does penetrate better than penicillin. Fischer and others demonstrated that tubercle bacilli isolated from 130 patients were uniformly inhibited by one microgram of streptomycin per cc. It is possible also that certain conditions supposedly due to tuberculosis allergy are benefited by altering the allergenic focus. Leopold and associates showed inhibition of cultures of E. coli by concentrations of streptomycin of 3 micrograms per cc.

For intraocular infections streptomycin should be injected directly into the anterior chamber or vitreous. Direct intravitreal injection of up to 800 micrograms may be used without permanent harmful effects. I would not recommend using over half this amount. Injection should be in the center of the vitreous away from the retina. The drug is toxic to retina and optic nerve. Temporary loss of light perception often follows and even with parenteral administration scotomas and hemianopsias are not infrequent. The toxicity of streptomycin to the eighth nerve and vestibular apparatus is well known.

The following case shows the value of intravitreal injection of penicillin and streptomycin as well as the toxic effects.

A 74-year-old white male with a history of tuberculosis in his family was examined by his local physician and reported to be free of infection except for possible prostatic involvement. Laboratory findings showed: 1+albumin, occasional pus cells in urine, and 1+sugar; blood sugar 70, N. P. N. 40. On September 4, 1950, an uneventful round pupil intrascapular cataract extraction was performed on the right eye. For three days healing progressed uneventfully with little reaction and a good clear red reflex. On the third postoperative night he complained of pain. When the eye was dressed the next morning a white mass in the vitreous was noted. There was no infection of the suture line, no chemosis or edema of lids or conjunctiva and no hypopyon. Three hundred thousand units aqueous and four hundred thousand units of procaine penicillin and ½ gram of streptomycin b. i. d. were ordered. The condition became worse during the day and there was a small hypopyon that night. Fifty thousand units of penicillin were injected sub-conjunctivally. Next morning there was no hypopyon present, no infection of the anterior eye, but more clouding of vitreous. Fifty thousand units of penicillin were injected sub-conjunctivally. Next morning the vitreous appeared completely solidified although the anterior chamber and aqueous were clear. The patient was taken to the operating room and the conjunctival flap turned down and a 27-gauge needle on a tuberculin syringe introduced through the original incision and a tiny bit of aqueous withdrawn for culture. Then o.1 cc of a solution containing five hundred units penicillin and two hundred micrograms of streptomycin was injected into the center of the vitreous. The entrance of the needle and its track could easily be seen in the solidified vitreous and there was no movement of the vitreous forward. The anterior chamber was refilled with o.1 cc. of this same solution. Light perception was lost for 8 to 10 days. By September 26, the eye was whitening and the vitreous less solid appearing. Vision was light perception. By October 31 the eye was white, the aqueous ray negative, the vitreous clear enough to see the vessels. There was a thin veil over the face of the vitreous. On October 15, the corrected vision in the eye was 20/30 - 3.

Chloramphenicol or **Chloromycetin:** Is one of the most valuable antibiotics to the ophthalmologist. It is stable in solution, non-irritating when used locally, does not retard corneal epithelization. It penetrates the intact cornea. It has been found very effective in the following external ocular infections: E coli, H. influenzae, Morax-Axenfeld bacillus, meningococcus, gonococcus, strep. hemolyticus, staph. aureus, inclusion blenorrhea, trachoma, and may be of help in Herpes simplex and zoster.

When given orally, it is rapidly absorbed and slowly excreted. Maximum concentrations appear in the blood in about 2 hours. Parenteral injections are unnecessary. It penetrates well into the aqueous and vitreous. Direct intravitreal injections are tolerated, but are not necessary. It causes less gastrointestinal irritation than aureomycin. In vivo experiments indicate three micrograms/cc. inhibit bacterial growth. Clinical experience indicates tissue concentrations of ten micrograms/cc. more than adequate.

Aureomycin: Has a fairly wide antibacterial spectrum being effective against some gram-positive as well as gram-negative organisms. Its effectiveness in virus diseases is still questionable. For example, it was reported to be effective against conjunctivitis due to Newcastle virus. Later controlled studies showed this to be in error. Initial reports indicated dramatic results in dendritic keratitis. Later experience has changed this view considerably. In our hands it has not been very beneficial in dendritic keratitis. It may be of some benefit in herpes zoster. The pain seems to subside more quickly. Several cases seemed aborted in that they never developed eruptions and pain remitted in a few days. There is a type of herpes without eruption, however, and these cases were probably of this type. Aureomycin does not penetrate into the intra-ocular tissues in effective concentration.

Bacitracin: Has a spectrum similar to that of penicillin. It inhibits growth of many gram-positive streptococci and staphylococci, as well as the pneumococcus, gonococcus, meningococcus and spirochete of syphilis. Penicillin-resistant strains may be susceptible to bacitracin.

This drug is of value to the ophthalmologist as topical application in external diseases of the eye. It is preferred to penicillin for this purpose since sensitizations are less frequent and it is not generally recommended for systemic administration. It is usually applied in ointment from containing 500 units/gm. It doesn't penetrate normal cornea in appreciable amounts unless the epithelium is injured. Concentrations up to 100 units/o.1 cc. in saline may be injected into vitreous.

Synergisms and **Antagonism:** Some very interesting observations on synergism and antagonism have been made. At present the situation is unsettled. Apparently two antibiotics may behave in one way against one organism and in the opposite manner against another organism under different conditions. Dowling states that streptomycin, by inhibiting the growth of gram-negative rods, complements the action of penicillin on the gram-positive cocci and also inhibits the production of penicillinase by the gram-negative rods. He reports synergistic action between aureomycin and streptomycin in brucellosis, penicillin and streptomycin in enterococcic infections, penicillin and bacitracin in syphilis, and penicillin and aureomycin in staph. infections. The sulfonamides have been reported as retarding the action of penicillin in some diseases and aiding it in other diseases.

Cortone: Cortone (originally designated as compound E. by Kendall) is one of a series of hormonal substances of the adrenal cortex. It was synthesized in 1946 and is now available as the pure compound of established chemical structure.

The dramatic response of patients with rheumatoid arthritis to cortone therapy set off a race to discover its value in other inflammatory diseases.

In certain inflammatory eye diseases results have been equally dramatic. As soon as cortone became available we began using it in cases of anterior and posterior uveitis, episcleritis, keratitis, herpes zoster and simplex, etc. To date we have treated about one hundred cases. Clinical experience has shown that cortone effectively controls the inflammatory and exudative phases of various ocular diseases, without affecting the etiological factor. This suppression of the destructive phases allows healing of self-limited diseases to proceed with minimized complications or gives us valuable time to eradicate the underlying factors before the functional integrity of the eye is lost.

In our hands cortone has been most effective in inflammatory processes involving the anterior portion of the globe and when used topically as 1:4 dilution of the stock preparation of cortone acetate. One drop is instilled in the eye every one or two hours.

Topical application has been of no value in diseases of the posterior segment treated in our clinic. Systemic administration has been of value in acute inflammations of the anterior segment, but offers no advantage over topical and presents many disadvantages such as depression of adrenal function, interference with water balance, possible increase in hypertension, increases insulin requirements for diabetics, greatly increased cost to patient, etc.

We have used cortone systemically in chronic cases of posterior uveitis without any apparent beneficial results. It is effective, however, in suppressing acute posterior uveitis.

Cortone did not seem to alter the course of one case of retrobulbar neuritis associated with demylinizing disease. Vision returned to 20/20 in the usual period of time.

You are all familiar with the rapid disappearance of pain and circum-corneal injection as well as the decrease in cellular elements in the aqueous and the freedom from posterior synechiae and secondary glaucoma when cortone is used fairly early in inflammatory processes of the anterior segment. Conditions such as episcleritis disappear in a matter of hours. Phlyctenular keratitis responds quickly so far as local pain and tissue damage are concerned.

I am now using local cortone postoperatively in all glaucoma operations. Postoperative inflammation is definitely decreased; synechiae are no problem, and I am hoping that by decreasing the fibrinous reaction there will be less scarring down of blebs and dialysis clefts. I also use it following repair of lacerations of the cornea after healing has progressed five to eight days; hoping thereby to decrease the extent of scarring and inhibit vascular ingrowth.

It has been shown to be of value in corneal grafting. In some cases when the prognosis seemed bad and vascular ingrowth imminent, the course was changed and no vascularization occurred.

When used early after severe herpetic ulcers, scarring has seemed to be decreased and no crippling opacities of the cornea have occurred when it was used. It is of no value in diabetic retinopathy although the vitreous may clear some. I believe it is beneficial in anterior chamber hemorrhages in decreasing inflammation and fibrin deposition. It is of no value in degenerative diseases. Sub-conjunctival injection does not appear to be as effective as drops.

ACTH or Adrenocorticotropic Hormone: Is a pituitary substance, which, as its name indicates, stimulates the adrenal cortex to release its hormones. The results in treating various inflammatory processes have roughly paralleled those of cortone. Many serious side effects may develop. It is effective only if given systemically. Extreme caution should be exercised in giving ACTH as well as systemic cortone.

BIBLIOGRAPHY

1. Bellows, J. G., "Chemotherapy in Ophthalmology," Arch. Ophth. June 1943
2. Von Sallman, Ludwig, "Controversial Points in Penicillin Therapy of Ocular Diseases," Arch. Ophth. June 1948 P 792
3. Leopold, I. H., Wiley and Dennis, "Vitreous Infections and Streptomycin," Am. J. Ophth. Nov. 1947, P 1345
4. Paresi, Peter J., "Streptomycin in Ocular Tuberculosis," Am. J. Oph. March 1951
5. Leopold, I. H., Nichols, A. C., and Vogel, A. W., "Penetration of Chloromycetin into the Eye,", Arch. Ophth. 44:300 July 1950
6. Leopold, I. H., "Clinical Trial with Chloromycetin in Ocular Infections,' Arch. Ophth. Jan. 1951 P 44
7. Bellows, J. G., "Modern Management of Ocular Infections," Am. J. Oph., 33:909. 1950
8. Fried, J. H., "Recent Advances in Ocular Therapy," Am. J. Oph. Dec. 1950 P 1881
9. Dunphy, Edwin B., "Ocular Therapeutic Principles and Practical Applications," Arch. Ophth. Vol. 44 P 797
10. Leopold, I. H., "Pharmacology and Toxicology: Review of the Literature," Arch. Ophth. 44:300. Aug. 1950
11. Swan, Kenneth C., "Pharmacology and Toxicology of the Cornea: Contemporary Concepts," Arch. Ophth. 41:253, March 1949
12. Grollman, Arthur. *Pharmacology and Therapeutics*, Lea and Febiger. Philadelphia, 1951

13. Dowling, H. F., "Antibiotics and hemotherapy," Vol. 1, No. 1, April 1951 P 2
14. Stillerman, M. L., "Ocular Manifestations of Diffuse Collagen Disease," Arch. Oph. March 1951
15. Armstrong, H. S., and Irons, Edwin N., "Physiological Consideration of ACTH and Cortisone Therapy with Reference to Ophthalmology," Arch. Oph. March 1951
16. Olsen et al, "Use of ACTH and Cortisone in Ocular Disease," Arch. Oph. March 1951
17. Mosher, H. A., "Local Use of Cortone in Ophthalmic Diseases," Arch Oph. March 1951
18. Fitzgerald et al, "Early Clinical Results of ACTH and Cortisone Treatment of Ocular Disease," Arch. Oph. March 1951
19 Steffenson et al, "Topical Cortisone in Eye Diseases," A. J. O. March 1951
20. Thygeson, P., and Fritz, M H., "Cortisone in Phlyctenular Keratoconjunctivitis," A. J. O., March 1951
21. Leopold, et al, "Cortisone in Ocular Disease," A. J. O., March 1951
22. Woods, Alan C., "ACTH and Cortisone in Ocular Disease," A. J. O. 33:1325 Sept. 1950

DISCUSSION

Dr. St. Germain (Meridian)—Dr. Rogers has given us a very interesting review of the new therapeutic procedures in ophthalmology. It hasn't been so long ago that there was very little that one could do for external diseases of the eye. In just a few years we have all of these new therapeutic agents that we can now use. I agree with Dr. Rogers that sodium sulfacetamide, 30 per cent solution, is the best sulfonamide therapy. Aureomycin, I use less often. Some of the others, bacitracin, terramycin and a few others, I have had only a little bit of experience with since they don't seem to work and the others did.

Cortone has certainly improved our prospects for many things. It has worked in a lot of external diseases. Massive vascular hemorrhages I have seen clear up in just about a week. We had a case of retinal detachment with a tremendous number of vitreous opacities. It was decided to give him cortone during the waiting period while we were waiting for the retina to settle down and after an interval of about 4 or 5 days I don't think we could have made a diagnosis of detachment of the retina.

Dr. Donald S. Hall (Vicksburg)—I would like to emphasize several points brought out by him in selecting therapeutic agents. The drug selected must be one that organisms are highly susceptible to; effective drug concentration must reach the organism whether by topical, oral, parenteral or direct administration; and the least amount of tissue irritation obtained, whether interference with tissue growth, actual tissue destruction, or sensitization of tissue. Each type of infection must be individually considered, as certain types definitely are more susceptible to certain drugs. An external infection may be adequately handled topically whereas an internal one definitely may need direct or parenteral injection. The point about poor penetration of intraocular tissues is far too well known.

There are so many therapeutic agents to choose from now that it is hard to say just what is the one of choice in every instance, and I think in many cases one of several agents can satisfactorily destroy the offending organism. New drugs are being developed so fast that it is hard to keep up with them. The disturbing factor about current treatment, however, is the apparent increasing bacterial resistance to drugs being used. The more any one drug is used, whether a sulfonamide, antibiotic, or mycin, the apparent more bacterial resistance is developed to it. Throughout the literature there are more and more reports of this being seen, and either much larger doses of the drugs have to be given or entirely new ones given. Whether this is the reason or not, at present in my experience the mycin drugs give the best results for ocular infections.

Bacterial studies in the laboratory at the Street Clinic show most interesting findings along this line. The overall picture shows the mycin group with chloromycetin first, to be the most effective against the common pathogenic organisms such as streptococcus, staphylococcus, pneumococcus, except bacillus pyocyaneus, which is most sensitive to bacitracin. Penicillin is one-half to one-third as effective. This may or may not mean that present strains of organisms have built up a strong tolerance to this drug which has been used over a longer period of time.

I don't think it is practical to make a smear or culture in every case of ocular infection, as a good clinical interpretation can be made in most cases. For simple external infections with a short duration and with minimal signs and symptoms, one of the mycin ophthalmic ointments is usually effective. If the infection does not subside in 3 to 5 days, or if it gets worse, a smear and culture with a sensitivity test are made and the drug or drugs for which the organism is the most sensitive given. Until a report is received, one of the mycin drugs is used. For an external infection of moderate long duration or if the signs and symptoms are moderately marked, an epithelial scraping and culture for sensitivity test is done at first. For intraocular infection, if possible, material is obtained for a culture and sensitivity test as soon as possible.

The sensitivity test that I speak of gives more valuable information by far than just a routine culture. It is the one emphasized by Dr. Bondi in his genito-urinary bacterial studies. Although certain bacteria may be thought to be susceptible to certain drugs, individual strains of these same organisms may turn out to be more susceptible to other drugs, especially if a drug resistance has been built up. It is this actual individual determination which is done quickly and accurately which gives such effective results.

Dr. Rogers has given detail information about cortisone, and here again I will only emphasize a few points brought out by him. It is a drug which doesn't cure, but relieves "stress syndrome" which permits other forms of treatment to be done and allow tissue repair to take place without marked tissue damage, such as scar tissue. For this reason it is best used in self-limiting diseases, and is very helpful in injuries and certain post-operative procedures, where temporary marked inflammation can be kept down and adhesions prevented.

Prolonged parenteral administration of cortisone may produce adverse effects by upsetting the endocrine balance—such as temporary diabetes, high blood pressure, gastric hemorrhages, poor tissue repair, and other known and unknown entities. Topical application so far, even over a prolonged time, has produced no harmful effect, and for anterior segment eye involvement it appears to be just as effective.

In acute iritis, marked congestion disappears almost within 24 to 36 hours and the patient feels well. Routine treatment in these cases is done just the same. So far, in my few cases, no reoccurrences have developed. I have used the drug on four cases of penetrating wounds of the globe near the ciliary body, which until the advent of cortisone, might have resulted in enucleation of the eye. On all four of these eyes the striking feature was that local congestion, swelling and secretion was reduced to a minimum and the patient felt fine throughout. Tissue repair seemed to take place as fast as usual. Anterior chamber hemorrhage cleared up about the same as without cortisone. Throughout the time of healing, the cornea seemed unusually clear.

One case of syphilitic interstitial keratitis with vision of 20/200 with definite marked corneal infiltration, as seen under the slit lamp, improved almost unbelievably. After using cortisone solution 3 days, the vision was 20/30 and almost all of the infiltration of the cornea was gone. In one week after the treatment the vision was 20/20 and no infiltration of the cornea was present. Specific treatment was given for the syphilis and the cornea is still clear after 5 months with no other treatment.

FROZEN ORANGE JUICE ON PAR WITH FRESH

Introduced only four years ago, frozen concentrated orange juice now accounts for approximately 35 per cent of all frozen food sales, exclusive of ice cream, according to the Council on Foods and Nutrition of the American Medical Association. In a report in the Journal of the American Medical Association (146:35, 1951), the Council holds "that frozen concentrated orange juice made from properly selected and prepared fruit is a dependable source of vitamin C and that it may be useful in the diets of persons of all ages."

Referring to evidence that "the frozen concentrated product can be as valuable from the standpoint of its nutritive content as is fresh orange juice", the report states that "it may be considered as the nutritive equal of fresh orange juice", meeting "the need for vitamin C intake in the diets of all persons, including infants."

—Noyes and Sproul, Inc.

Heart Disease in Pregnancy*

K. RAMSEY O'NEAL, M.D.
Hattiesburg, Miss.

INCIDENCE

HEART disease in pregnancy has been reported by various writers as having an incidence of one to four per cent. It is generally believed that heart disease occurs about once in every forty pregnancies. Since control of infections and hemorrhages has been increasingly successful, heart disease has become one of the major causes of maternal deaths so that today it ranks fourth as a cause of maternal deaths. The trend from Cesarean section to forceps delivery, a greater use of local anesthesia, improved prenatal care, and an evident liberalization in interruption of pregnancy in poor risk patients has lowered the death rate from 14.18 to 12.64 per thousand pregnancies. A further lowering of this figure is forecast through early registration of the patient, improvement in selection of patients for therapeutic abortions and judicious sterilization. In young and otherwise healthy women, pregnancy does not seem to exert harmful influence on mild heart disease. However, it appears that decompensation is over twice as common in cardiacs over thirty years than in those under thirty years.. Consequently, in women known to have heart disease, it is recommended that they have their children in early married life.

Parity, in itself, does not appear to alter the prognosis one way or the other except in cases where there is a history of decompensation in a previous pregnancy or in the interim between pregnancies. About 75 per cent of the women who previously had failure will have severe failure again in pregnancy.

The chief causes of death among pregnant women with heart disease are congestive failure 56.1 per cent, sepsis 14.6 per cent, pulmonary embolism 12. 2 per cent, shock and hemorrhage 4. 9 per cent, toxemia of pregnancy 4.9 per cent, bacterial endocarditis 4. 9 per cent, and toxic hepatitis 2. 4 per cent.

Infant mortality appears to be unaffected by maternal heart disease per se. However, Irving reported a fetal mortality of 18.4 per cent in 850 patients with heart disease. In those patients who were in a favorable condition and in whom failure did not develop, the fetal death rate was 12.5 per cent. In those favorable patients in whom decompensation developed, the rate was 29 per cent. Among cardiac patients whose condition was not favorable when first seen, the fetal death rate was 44.3 per cent. The chief factors in the death of babies were prematurity, medication before delivery and operative delivery. The chances for a live baby are not favorable if it is delivered before the thirty-fifth or thirty-sixth week. The fetal death rate following delivery of women with cardiac disease by low forceps is lower than that which follows spontaneous delivery or Cesarean section.

By far the most common type of heart disease in pregnancy is the rheumatic type being reported as occurring as high as 92 per cent of the cases. Less common types are congenital, luetic, hypertensive, and bacterial endocarditis. Mitral stenosis is the most common lesion but this is not felt to be of any significance. In congenital heart disease, as a group, patients with patent ductus arteriosus were most seriously affected. Also serious, but to a lesser degree, were ventricular septal defects. Auricular septal defects and pulmonary stenosis cause little difficulty.

Certain physiologic changes in the circulatory system occur in every normal pregnant woman. The heart is rotated laterally on its base by upward pressure of the diaphragm and presents a broadened area of dullness to percussion. Consequently, functional murmurs are commonly observed. Their extra-cardiac origin can be easily demonstrated by disappearance of the murmur with the patient leaning forward or during the height of a deep inspiration. Therefore, increase in cardiac dullness and the presence of a systolic murmur do not indicate heart disease.

Tachycardia and extrasystoles occasionally appear in pregnancy and usually are not significant, however, they do constitute basis for complete and thorough investigation of the patient's cardiac status.

MANAGEMENT

Prenatal care. When an obstetrical patient presents herself for prenatal care her cardiac status should be carefully evaluated. Each case must be individualized and it is also wise, if possible, to obtain the opinion of a competent cardiologist. If definite heart disease is found, it must be decided early just what shall be done with each case. To help in making such a decision, it is wise to classify the patient as to functional capacity as set forth in the generally accepted classifications of the New York Heart Association. In brief this classification is as follows:

---

*Delivered before the Mississippi Association of Obstetricians and Gynecologists, Greenville, Miss., October 26, 1950.

Class I: Patients with cardiac disease without limitation of activity. Ordinary physical activity does not cause discomfort (45 per cent, prognosis is good).

Class II: Patients with cardiac disease with slight or moderate limitation of activity. They can do ordinary physical activity but experience such discomfort as undue fatigue, palpitation, dyspnea and anginal pain. (About 40 per cent of this group probably will have no trouble).

Class III: Patients with cardiac disease and marked limitation of physical activity. Although comfortable at rest, less than ordinary activity causes discomfort as given above. (About 10 per cent, prognosis guarded, may have serious trouble).

Class IV: Patients with cardiac disease who are unable to carry on any physical activity without discomfort. Symptoms of insufficiency or of the anginal syndrome occur even at rest. (5 per cent, difficult to manage. Mortality high. These should be aborted if seen in first trimester).

Using this classification one can more readily make a decision concerning the management of each case. If the patient seeks help prior to pregnancy, the problem may be a matter of deciding whether or not pregnancy is contra-indicated. If the patient is already pregnant, the question may be should the pregnancy be interrupted. Pregnancy is felt to be contra-indicated in those cases which have had severe decompensation in a previous pregnancy; moderate to marked decompensation in a now-pregnant state; or who have developed decompensation in the first trimester of pregnancy. Also, pregnancy is felt to be contra-indicated in those patients who have persistent auricular fibrillation, mitral stenosis with myocardial failure, syphilitic aortic regurgitation, subacute bacterial endocarditis, or active rheumatic fever. In cases of inactive subacute bacterial endocarditis it would appear wise to defer pregnancy until at least six months after the disease has been cured. If pregnancy is contra-indicated and the patient is seen within the first three months, a therapeutic abortion by means of dilation and curettage is advised. If the patient is in acute failure, she should be compensated before surgery is attempted. If she is seen in the fourth month or later, interference is withheld and she is carried to term anticipating the spontaneous improvement in the last month of pregnancy. This decision is based on the fact that cardiac patients do not tolerate laparotomies well and termination of pregnancy in the second trimester thus approximates the severity of delivery at term.

Case Summary: Mrs. A. C. E., 22-year-old white female presented herself on April 12, 1950, with a chief complaint of inability to become pregnant. System review revealed symptoms of nocturnal cough, dyspnea after slight exertion, even after walking only two blocks, and an irritating white vaginal discharge. She gave a past history of developing a heart murmur after having measles at the age of four years. She also was told that she had a probable spontaneous abortion of about six weeks gestation in January 1949. Physical examination produced these positive findings: blood pressure 100/60; mild cyanosis at rest; clubbing of fingers; excessive prominence of right chest producing deformity; loud harsh systolic murmur over entire precordium, loudest in second interspace on the left with radiation to the left shoulder and neck. There was a definite palpable thrill. Gynecologically, she was found to have yeast vaginitis, tender cystic mass, lime size, in right adnexa and tender thickening of left adnexa. Urinalysis was negative and blood count revealed mild secondary anemia. Electro-cardiogram showed right axis deviation and x-ray showed markedly dilated pulmonary conus and enlarged right heart. She was classified as cardiac disease Class III and was seen in consultation by a cardiologist. A diagnosis of Eisenmenger's Syndrome was made. The patient was advised not to become pregnant because of the severity of the heart disease and the lack of compensation. Proper contraceptive measures were prescribed.

Prenatal care is of vital importance. Class I and Class II patients usually go through without difficulty. Class I patients usually do well and require little more than careful observation to detect incipient signs of failure. They are seen at more frequent intervals. Anemia and obesity are corrected to remove extra cardiac work. Class II patients can be carried along on about the same routine, but must have more rest. Upper respiratory infections are prone to precipitate failure as well as are other acute infections. Therefore, even common colds are treated vigorously. Penicillin is given prophylactically after dental extractions. It is often advisable to hospitalize more severe cardiacs in event of bad colds or bronchitis. Antibiotics are given to prevent subacute bacterial endocarditis. Class III and Class IV patients require much closer observation. Sodium, fluid, and activity are restricted in addition to other general measures. If digitalis has not already been required, it is frequently wise to do so in the last trimester in anticipation of the peak cardiac load. With evidence of impending failure these patients are put to bed. If decompensation occurs the patient should be hospitalized. The earlier the break in compensation occurs the more dubious is the outlook. After a patient recovers from decompensation, the safest thing to do is to keep her in the hospital until the pregnancy is terminated. She should be permitted to go home only if she will obey orders implicitly and return for regular check ups. At the best, recurrences of failure are common, and present greater hazards. If possible, Class III and Class IV patients should be admitted to the hospital, even if compensated, four to eight weeks before term. Class II patients should be admitted one to two weeks before expected date of confinement.

Labor and Delivery. Because the major circulatory loads do not increase after the eighth month and because generally there is improvement in the cardiac status during the last month, labor should rarely be induced after the eighth month. Formerly the unsatisfactory results which followed induction of premature labor led to the use of Cesarean section for premature delivery. Now, however, whereas rheumatic heart disease did not tolerate the usual desultory labor produced by premature induction, it has been shown that it does tolerate the more satisfactory type of labor which occurs spontaneously at term. In fact vaginal delivery has been shown to be safer than abdominal delivery. This means that Cesarean section is seldom, if ever, indicated because of the heart disease per se. What the patient can endure during labor is unpredictable. Cardiac patients must be watched constantly. Labor should be made as painless and as short as possible. Sedation should be given to relieve the mental and physical anguish but care should be taken that not too much be given lest anoxia be produced. Demerol and barbiturates are recommended, but hyoscine is believed to be contra-indicated because of the excitement produced in some cases. The pulse rate and respiration should be watched closely because they afford a valuable guide to the cardiac status. Consequently, any patient with a pulse rate above 110 per minute and a respiratory rate above 24 or a sufficient elevation of the pulse rate alone should be completely and rapidly digitalized. As soon as the cervix is completely dilated, the baby should be delivered if this can be done without harm to mother or child. Local, pudendal block, caudal anesthesia or saddle block are safest with the patient receiving oxygen during the delivery of the baby. If the patient must be put to sleep, open drop ether is the safest of all inhalation anesthesias. Delivery by low forceps and episiotomy is recommended and pushing and straining in the second stage should be avoided.

Case Summary: Mrs. H. B. T., 17 years old, primipara, was first seen on July 2, 1950. Her last menstrual period was February 27, 1950, and her menstrual history was previously regular every 28 days prior to the onset of amenorrhea. She had no other symptoms other than slight to moderate dyspnea after exertion such as stair climbing or walking too fast. Her past history was questionably significant in that she thought she had rheumatic fever at the age of 4-5 years.

Positive physical findings were as follows: Blood pressure 110/70; height, five feet and nine inches; weight, 143 pounds. Very slight, if any cyanosis could be detected. Auscultation of the heart revealed a loud systolic murmur heard over the entire precordial area, but was best heard in the second interspace on the left, with the murmur radiating up into the neck and out towards the left shoulder. There was also a marked thrill associated with the murmur. Pelvic examination revealed pregnancy of approximately four months duration and an adequate gynecoid pelvis. Urinalysis showed moderate pyuria and blood count revealed only mild anemia. Blood Wassermann was negative. X-ray of chest showed moderate dilatation of pulmonary conus and slight enlargement of the right heart. Electro-cardiogram showed only right axis deviation. A cardiac consultant saw the patient on multiple occasions. A diagnosis of Eisenmenger's Syndrome was made and the patient classified as cardiac disease, Class II.

The patient was given treatment for pyelitis and anemia as well as routine calcium and vitamin therapy. She was seen at two to three-week intervals but in spite of all efforts she gained excessively from the beginning, and hence, was placed on a low salt diet. On September 19, 1950, the patient went into premature labor at home and came to the hospital with membranes intact and the cervix almost completely dilated. Saddle block anesthesia with 2.5 mgm. of heavy nupercaine was given and the patient was administered continuous oxygen during the remainder of her labor and delivery. No analgesics were used. An approximately six and one-half months premature female infant weighing three pounds and six ounces was delivered by outlet forceps and episiotomy. The baby cried immediately but respiration was never normal and death occurred approximately five hours after delivery. The mother had a completely uneventful postpartal recovery and left the hospital on the seventh postpartal day. She did not return for postpartal check-up as her husband was called back into the army.

The vast majority of patients can be safely delivered by vaginal route by low forceps and episiotomy, however it is a serious mistake to perform a difficult mid-forceps operation simply to relieve the patient of the second stage of labor. If the physician feels that labor will be prolonged or will have to be terminated by difficult operative delivery, Cesarean section is far better for the patient. Certainly any obstetrical indication for section such as placenta previa, cephalopelvic disproportion, dystocia labor, etc., warrants abdominal delivery just as it should in a non-cardiac patient. If a patient should give a history of decompensation in a previous labor, Cesarean section would also be advisable as a method of delivery for subsequent pregnancies. Coarctation of the aorta presents a special problem. The functional classification is not necessarily related to the immediate prognosis because of the ever present danger of rupture of the pathologically thinned aorta or cerebral vessels. Therapeutic abortion may be indicated and delivery should be done by Cesarean section. Hypertensive cardiovascular disease in pregnancy connotes a potential cardiac because of the danger of left ventricular strain and decompensation, dissecting aneurysm and cerebral hemorrhage. These patients do not tolerate labor well and are best delivered by section. The low cervical section is felt to be best and local or ether anesthesia safest.

Case Summary: Mrs. J. C. N., 34 years old, para O, gravida 1, last menstrual period December 6, 1949 and estimated date of confinement September 13, 1950. She was first seen when she was approximately three months pregnant after referral from a local internist by whom she had been treated for hypertension for four years. She had a normal menstrual history and this was her first pregnancy in ten years of married life. She had been advised by the internist not to become pregnant and therapeutic abortion was recommended but the patient insisted on going through with the pregnancy.

Physical findings were as follows: Blood pressure at her first visit was 170/120 which it reportedly had been before pregnancy ensued. Complete blood picture was normal, Wassermann negative, blood type O, Rh factor positive, P.S.P. 70 per cent, electrocardiogram and x-ray were within normal limits. She was placed on low salt diet, hypertensive regime as well as the usual calcium, vitamin and iron prescriptions. She was considered to be cardiac disease, Class I or II. She was seen at two to three week intervals and her blood pressure ranged from 152/90 to 190/140 throughout. She gained from 101½ pounds to 116 pounds. Her urinalysis was negative at each visit. On August 15, 1950, even though patient's general condition was still good and the blood pressure still 180/120, it was decided to do an elective section for reasons as outlined in this paper. The patient was admitted to the hospital on August 18, 1950 at which time her blood pressure was 230/158 and the urine showed one per cent albumin. She was put on a strict toxemia regime including heavy sedation, intravenous hypertonic glucose, and intramuscular magnesium sulfate. She responded well. The blood pressure was stabilized at 190/140 within twenty-four hours. On August 19, 1950, a classical Cesarean section was performed under penthothal anesthesia with a six-pound male infant being delivered three minutes after beginning of anesthesia. The baby cried immediately and the patient survived surgery without difficulty. A bilateral ligation was also performed. Postoperative course for the mother and baby was uneventful. They were discharged on the ninth postoperative day with the mother's blood pressure

168/118. Mother and baby continued to do well after discharge.

Sterilization should be considered in patients with mild cardiac damage and is indicated in those with severe damage but individualization is necessary. From a medical standpoint the number of children must be taken into account in deciding the question. It has been said that the baby in the cradle and not the one in the uterus makes the greater demand on the cardiac patient. For this reason the size of her family should be limited. Sterilization should always accompany therapeutic abortion since a patient with sufficient heart damage to justify termination of pregnancy will never be able to bear a child. Finally, the desire to sterilize should not be used as an indication for section as the simple operation of sterilization can be performed with a minimal risk at a later date.

The management of these cases does not end with the delivery. About 2.5 per cent of these patients become decompensated after delivery. Hence, the general cardiac measures should be continued. Penicillin is recommended to prevent puerpural sepsis and subacute bacterial endocarditis. Ambulation is advisable as soon as the cardiac status will permit. Breast feeding is not advocated because of the increased physiologic demands and danger of mastitis.

In closing, I want briefly to consider a condition known as postpartal heart disease as described in the literature by Hull in 1937 and again by Melvin in 1946. The earliest symptoms usually appear from between two to six weeks after delivery. The onset is as a rule insidious, early symptoms being pedal edema or cough. These symptoms progress until a state of full blown decompensation is present. These patients have previously shown no evidence of heart disease, hypertension or electro-cardiographic or x-ray changes. The heart is markedly enlarged. Diastolic gallop rhythm is usually present and pulmonary edema is severe. All laboratory findings are usually those of congestive heart failure. Etiology is unknown, but it tends to occur more frequently in colored people, and a poor dietary history is often obtained. It tends to be more severe after the first pregnancy and the prognosis is nearly always quite good. Oxygen and demerol or morphine are indicated during acute attacks of dyspnea. The patient should be informed that recurrences are likely after subsequent pregnancies, and two such episodes of failure should justify sterilization.

Case Summary: M. L., a 24-year-old colored female, para. II, gravida III, last menstrual period August 13, 1949, estimated date of confinement April 20, 1950, came from Chicago, Illinois, to have her baby at home. She was in my office only once prior to delivery. At this time her blood pressure was 122/60, weight 163½ pounds, pelvis was adequate, heart and lungs were normal, Wassermann was negative, hemoglobin 74 per cent and no history of rheumatic fever or known heart disease. On April 8, 1950, an apparently normal, six pound and three ounce, baby girl was delivered spontaneously. Labor and delivery were not prolonged or complicated. The patient was discharged on April 10, 1950 and returned for her six weeks' check up on May 31, 1950. At this time she had no complaints and was generally in good condition except for retroverted fundus and slight cervicitis. On June 13, 1950, I was called to see the patient at her home. At this time she complained of dyspnea and severe cough which had progressively become more severe for one week. Examination revealed severe orthopnea, auricular fibrillation, marked pulmonary edema and marked pretibial edema. She was hospitalized. X-ray of the chest showed marked cardiac dilatation and typical picture of decompensation. Urinalysis was negative and blood count revealed mild leukocytosis, but otherwise was within normal limits. She responded well to digitoxin, rest, salt free diet and sedation. She was discharged on the seventh hospital day. She was seen in the office on June 28, 1950 at which time her blood pressure was 120/80. Heart sounds were regular and clear. Lung fields were clear and there was no edema. She returned to Chicago on July 15, 1950, to be with her family. Subsequently, she was hospitalized in Cooke County Hospital for further study and follow up in their clinic. Cardiologists there agreed that we were dealing with a case of idiopathic postpartal heart disease.

Summary

1. A brief general discussion of heart disease in pregnancy has been made.
2. An outline of pre-natal care and management of labor and delivery has been given.
3. Four cases have been presented with various aspects of management being outlined.
4. Most cardiacs show spontaneous improvement during the last month of pregnancy, and hence, premature delivery either induced or by Cesarean section is not advisable.

5. Some form of local or regional anesthesia is preferable in most cases for delivery which is best accomplished by low forceps and episiotomy to prevent the straining of the second stage of labor.

6. Delivery by Cesarean section is seldom indicated except for the usual obstetrical indications.

REFERENCES

1. DeLee—Greenhill, Principles and Practice of Obstetrics, 9th Edition—Page 443.
2. Titus, Management of Obstetrical Difficulties, 3rd Edition—Page 212.
3. Anderson, E. G., American Journal of Obstetrics and Gynecology—57; 793; 1949.
4. Lesse, Stanley—American Journal of Obstetrics and Gynecology—56; 477; 1948.
5. Greenhill, J. P., Yearbook Obstetrics and Gynecology—Page 65, 1949.
6. Sampson, John J., California Med., 70; 383, 1949.
7. Lund, Curtis, J., American Journal of Obstetrics and Gynecology—55; 244, 1948.
8. Mendelson, Curtis L., American Journal of Obstetrics and Gynecology—56; 645, 1948.
9. Garber, J. R., J. M. A. Alabama—15; 309, 1946.
10. Kuder, Katherine, American Journal of Obstetrics and Gynecology—52; 265, 1946.
11. Melvin, J. P., American Heart Journal, 1946.

Report of Six Cases of Rupture of the Uterus

DR. THEO. F. MIDDLETON
Meridian, Miss.

Rupture of the uterus, with a recognized mortality of 50 per cent according to various authors, is one source of maternal death that may be attributed in large to the obstetrician and practitioner in charge of the case in which this situation arises. It is only by diligent care, watchful expectancy and careful management of all labor cases that we can eliminate this obstetrical accident with its high mortality.

A review of the literature for the past twenty-five years reveals no decided decrease in cases diagnosed as ruptured uteri and there has been only a small decrease in the mortality rate, this figure seemingly varying with the individual authors, rather than indicating a trend downward in over all mortality figures.

Whitacre[1] in commenting on his service at the Peiping Union Medical College, China, between 1934 and 1941 revealed the highest incidence of one in ninety-five cases. The mortality in this group was 56 per cent. Lynch[2] reported an incidence of one in 1,729 cases with 50 per cent mortality figure. Dugger[3], who reported an incidence of one in 3,029 with a mortality of 61 per cent. Figures of other authors reveal about the same incidence and mortality rates.

This report includes five cases seen by the author and one by another physician in the 1949-50 year period in Matty Hersee Hospital. For the same period there were 523 obstetrical cases delivered in this hospital. There is no doubt there were cases in this area not diagnosed and attributed to some other reason.

This area still has 24.9 per cent of deliveries attended by mid-wives and it has been only through the efforts of the Division of Maternal and Child Welfare of the Mississippi State Board of Health that difficult maternity cases in the lower wage group are screened and directed to a doctor for delivery, thus lowering chances of a difficult case being attended by the mid-wife.

The causes of rupture of the uterus have been classified quite uniformly; namely, those rupturing due to pre-existing scars, those due to obstetrical trauma and those rupturing spontaneously. Brierton[4] has shown evidence in his review of the literature in the last twenty-five years of a downward trend in incidence in those ruptures due to obstetrical trauma and an increase in the cases resulting from rupture due to a cesarean scar.

Rupture Due to Cesarean Scar: Rupture due to precious caesarean scars has become the most common cause of uterine rupture, primarily because cesarean section had attained a higher incidence. The use of antibiotics and late trends in use of blood and plasma has lessened the mortality of this procedure and made it more commonly used in many hands. Of 246 patients delivered by cesarean section in Bellevue Hospital by competent personnel during the years 1932 and 1947 there were seven ruptured uteri or an incidence of 2.8 per cent. This figure is interesting in that there were four ruptures in an estimated total of 9 classical scars and three ruptures in an estimated total of 152 lower segment scars.

giving comparative incidence of 4.2 and 1.9 per cent respectively.[4]

It has become a well established fact that the classical procedure has a higher incidence of rupture than the low cervical section. Phaneuf[5] has reported an incidence of twenty-five per cent of rupture following classical section as compared to three per cent following the low cervical procedure.

The dictum "Once a section, always a section" should be adhered to in the face of the figures presented in the past twenty-five years. The integrity of the uterine scar cannot be ascertained despite previous postpartal course with absence of febrile reaction and regardless of whether the operator was most careful in closing the incision or not. The uterus does not heal by muscle regeneration but by fibroblastic reaction which varies in strength from one patient to another. Greenhill and Bloom[6], in a study of uterine scars in thirty-seven cases found healing by scar tissue in thirty-one or 84 per cent. There is definite necessity for careful closure of cesarean section incisions in view of this fact. Carelessness will only be conducive to a higher number of rupture cases following cesarean section, which we know is more frequently employed in obstetrics as practiced today.

Spontaneous Rupture of the Uterus: Spontaneous rupture, in most instances is accompanied by the highest mortality figure, primarily because the rupture is not suspected and usually occurs in the course of a labor where no trouble is anticipated. These contributing factors here include multiparity, malpresentation, pre-existing infection with scarring of the lower uterine segment, low implantation of the placenta, monsters and adenomysis. Included in this group should be those cases of rupture caused by injudicious use of pitocin and pituitrin. This practice cannot be condemned enough and is more common than generally admitted.

This group affords a source of these cases from which we may lower the incidence by our own diligence as obstetricians and physicians. Multiparity in itself when present in an obstetrical case should be a source of concern for the attending doctor, and not afford mental laxity because of uncomplicated previous delivery. Neglect of multipara results in many serious obstetrical situations which can be avoided if recognized. DeLee[7] states that face, breech and shoulder presentations, persistent occiput posterior positions and deep transverse arrest are more frequent, while the action of the uterus in the multipara leaves much to be desired, since the pelvic synchondroses are rigid, the nutation to the sacrum is absent and delay in delivery may occur. All these retard labor and necessitate frequent recourse to forceps which increase the danger to the mother and child. The dangers for the mother are laceration and infection, for the child cerebral injury and asphyxia.

Rupture Due to Obstetrical Trauma: In this group the etiology of the uterine rupture is not in doubt, being attributed to manipulative delivery. The report by Brierton[4] revealed a downward trend through the years in the incidence of uterine rupture which speaks well for the progress of the obstetrician and practicing physician.

Of the three contributing causes of uterine rupture, obstetrical trauma had the highest percentage, ranging from 49.1 to 65.4 per cent in the reports by Sheldon[8], Lynch[2], Morrison and Douglas[9] and was approximately equal in incidence percentage in the report of Delfs and Eastman[10]. The reports of Bill, Barney, and Melody, Brierton,[4] Dugger[3] all show a decrease in percentage incidence varying from 17 to 42 per cent. It has only been through adequate training of obstetricians and through better training of practicing physicians, through postgraduate lectures and clinical instuction has the incidence of rupture due to obstetrical trauma been lowered.

Version and extraction remains as the procedure contributing most of the cases of uterine rupture. Though a valuable and necessary maneuver in the hands of an obstetrician, this maneuver should not be employed except in properly selected cases and only when definite conditions are met with by the patient in the progress of her labor. Too often an overanxious attendant attempts the procedure before the proper time and thus a useful procedure misused receives undue condemnation.

Forceps delivery is next most commonly mentioned as a contributing factor in uterine rupture. Here an inanimate instrument receives the blame for an accident which can only be laid to the hands of the attendant. Low forceps seldom may result in rupture and of late has become the most universally accepted means of forceps application. Mid-forceps and high-forceps application have in the past been prominent factors in reports of uterine rupture. The downward trend evidenced by the review of the literature and already cited, may in some part be attributed to the falling popularity of mid-forceps and high-forceps application as a universally accepted procedure.

Other causes of uterine rupture due to obstetrical trauma may be mentioned, namely, the Voorhees' bag which no longer receives the popularity it once did, manual removal of the placenta and unnecessary roughness in attempting the Crede maneuver for expelling the detached placenta.

Diagnosis: The recognition of uterine rupture is difficult and yet presents itself without a doubt in many cases. The typical story of prolonged difficult labor, with regular pains, retarded progress of the foetus through the birth canal, sudden severe pain of tearing nature with cessation of pain, signs of shock with or without obvious bleeding does occur and should never be overlooked. Yet review of cases in the literature show that it is. The patient may in many instances describe the pain as tearing in nature, unlike her previous labor pains. This word of the patient should always be heeded.

Shock may or may not be present. The site of the tear, the integrity of the membranes and position of the foetus influence the amount of bleeding. An intact bag of water will tamponade a rupture and prevent bleeding enough to keep the blood pressure maintained for a prolonged period of time. A protruding head or extremity of the foetus will in a similar manner act as a tamponade and prevent hemorrhage.

Should the site of the rupture be partial, or extend into the broad ligament, shock is not likely to be evident, though pain will be severe. Death of the foetus is usually a constant finding in these cases and one should always bear in mind rupture of the uterus when history of prolonged labor and foetal death are noted. The abdominal palpation of foetal parts with ease, or presence of transverse lying high in the pelvis are valuable signs. Inspection of the uterus under operative room conditions, with blood and anesthesia available and sterile technique observed will reveal uterine tears of the lower segment quite easily. Ruptures of the fundal portion may not be located in this manner unless the uterus has already been emptied. It is not advisable to empty an already diagnosed ruptured uterus.

Treatment: Once diagnosis is made or indications are within realm of surgical possibility, laparotomy is indicated. Blood should be made available as soon as the patient has entered the hospital. The patient's parity, general condition and the site of the rupture all lend consideration to the precedure of choice.

The patient in profound shock whose blood pressure cannot be raised by intravenous infusions, is not to be denied surgical intervention. Until the uterine tear is repaired or the uterus removed, she will continue to hemorrhage. A simple approximation of the cleaned edges of the rupture with ligation of the tubes may be all that is necessary. In patients of low parity who are desirous of having more children, a debridement of the edges of the rupture and careful approximation of the tear is acceptable, this patient meriting careful observation in her subsequent pregnancies and future delivery by cesarean section. In the patient of multigravidity, total and sub-total hysterectomy are the procedure of choice. Bleeding points are to be controlled as soon as the tear is exposed. Clamps are applied to the uterine arteries as soon as possible to reduce the amount of blood flowing into the torn area. A drain may be left in the vaginal cuff in contaminated cases but is not mandatory. Routine use of antibiotics and blood, observation of bladder, bowel and pelvic and leg veins are adhered to.

CLINICAL HISTORIES

Case 1—O. M. DFM., age 21, gravida IV, para III, admitted to Matty Hersee Hospital on 2-10-50 and discharged 2-18-50. On admittance patient found to have transverse presentation with one hand protruding through the cervix. Had been in labor fifteen to twenty hours before entering hospital. Blood pressure on admittance was 100/80, pulse rate was 92. The uterus was soft and no pains were noted by the patient. Patient was taken to operating room, 500 cc. blood started and penicillin given. Examining hand introduced into the uterus and rupture located posteriorly in lower segment, anteriorly. She was then draped and under ether anesthesia (open drop) a total hysterectomy was done. The patient stood the procedure quite well and had uneventful postoperative course except for distention. She left the hospital on the eighth postoperative day and postoperative check six weeks later revealed her to be in good health.

Case 2—G. J., CFM., gravida III, para II, age

26, admitted to Matty Hersee Hospital on 12-18-49 and expired 12-26-49. This patient was brought into the hospital in profound shock by her attending physician who stated she had gone into labor some eight hours previously and on pelvic examination he had noted a hand presenting. A version and extraction of a dead foetus had been done but the placenta could not be extracted and she had bled continuously. In the operating room, under ether, with blood given I. V. a hand was introduced into the uterus and separate tears noted in the posterior surface of the uterus and vagina. She was then prepared for surgery and a total hysterectomy successfully performed. The blood pressure returned to normal. Despite chemotherapy of penicillin, streptomycin and sulfa, the patient expired on the eighth postoperative day. Permission for regional autopsy was granted and revealed a generalized organized exudate over the entire peritoneal cavity. Collections of pus noted in dependent areas. The patient had received four blood transfusions and supportive care.

Case 3 — Mrs. E. W., age 20, gravida II, para I, admitted to Matty Hersee Hospital 2-15-50, discharged 2-21-50. On admittance patient was in active labor, pains every three minutes and had been in labor for four and one-half hours. She gave a history of previous cesarean section for contracted pelvis. The last cesarean section eighteen months previously. She lived in the country and both husband and wife gave permission for desired sterilization. Blood pressure and lab. work within normal limits.

She was taken to the operating room and delivered a normal male infant by low cervical section. A cornual resection of tubes was done. A small area of hemorrhage, approximately 2 cm. in diameter was noticed in the fundus when the abdomen was opened and attributed to subperitoneal hemorrhage of the uterus from manipulation. It was later reinspected and seen to have enlarged to about 4 cm. in diameter. An incision in the uterus was made in this area and the area of hemorrhage found to be the apex of a triangular partial rupture of the uterus, evidently in the old classical scar. All areas of rupture were trimmed and re-approximated. Patient stood procedure very well and had an uneventful postoperative course.

Case 4 — M. J., CFM., age 34, gravida IX, para VIII, admitted to Matty Hersee Hospital on 1-18-50 after being in labor for twenty hours. Attended by physician—labor non-progressive. X-ray sent with patient revealed brow presentation. On admittance, blood pressure 152/110, pulse rate 85, respiration 20, temperature 99.

Patient passing dark brown blood per vagina and pains stopped since 10:00 P. M. on 1-17-50. General condition appeared good. No foetal heart tones were audible and mother stated she had not felt baby move for last three hours. Patient was taken to operating room and with 500 cc. blood on hand, a sterile vaginal examination was made. The cervix was dilated six to seven cms. and membranes intact. These were ruptured inadvertently during examination and placenta presented at os. A tear in the lower cervical segment, anteriorly was noted. The foetus was flaccid and was easily extracted through the cervix and vaginal passage. Blood pressure was maintained throughout.

Patient was then prepped and draped for hysterectomy. This was done through midline incision. Blood pressure maintained throughout between 140/100 and 150|110. Meconium and old blood were found throughout the peritoneal cavity.

A sub-total hysterectomy was done because bleeding was excessive from the large venous sinuses and only 500 cc. blood available. Patient stood the procedure quite well and was sent to the ward in fair postoperative shape. 1000 cc. of blood was obtained and given in the first twenty-four hours postoperatively.

Patient had usual postoperative care with infusion, antibiotics and was fed soft diet first postoperative day. Had uneventful postoperative course and was discharged fifth postoperative day to return to her local hospital in ambulance. Temperature never higher than 99.

Case 5 — H. W., CFM., gravida III, para II, admitted to Matty Hersee Hospital 3-21-49 and discharged 3-28-49. On admittance patient gave history of pain in lower abdomen and right side for one week. Four hours before admittance she suffered a sudden sharp pain in right side while working in her kitchen. This pain was still present on admittance. Blood pressure on admittance was 110/80 and vaginal examination revealed a uterus enlarged to size of three months pregnancy. Cul-de-sac puncture was made and free blood was aspirated. Diagnosis of ruptured ectopic pregnancy made and patient cross matched and prepared for surgery.

On opening the abdomen, a complete rupture of the right uterine cornua was noted twin foetuses lying free in the pelvis. A total hysterectomy was done.

The uterus was inspected and seemed to have ruptured from an interstitial twin pregnancy. The twins measured 16:5 and 16 cms. long and were assumed to be about three and one-half months gestation.

The patient had an uneventful postoperative course and left the hospital on the seventh postoperative day.

Case 6 — T. H., CFM., gravida VIII, para VII, was admitted to Matty Hersee Hospital 2-22-50 at 3:30 p. m., and died on 1-23-50 at 5:30 a. m. Patient had been in labor for thirty hours before admittance, attended by midwife. Blood pressure on admittance was 190/90, temperature 102° and there was 2 plus albumen in urine and pitting edema of tibia. Patient was in considerable pain, of constant nature and bleeding vaginally. A flat plate of abdomen revealed term foetus in transverse presentation. At 2:00 a. m., 1-23-50, patient was seen in consultation, blood pressure 118/80, PR 112, bleeding vaginally and having received supportive care with fluids, sedation, magnesium sulphate, demerol aned typed for blood. FHT were not audible and uterus was flaccid. Foetal parts were readily palpable but this was attributed to thin flaccid uterus and thin abdominal wall.

Vaginal examination under proper conditions in operating room was done. Placenta was found in the cervix, already detached. Examination of the uterus revealed a tear in right side of the uterus above the level of attachment of the broad ligament.

Patient was operated upon, the fetus removed through the tear and because of poor condition the tear was approximated and bleeding controlled. A frank exudate was noted over the small bowel and pus was present in the dependent areas. Only 500 cc. of blood was obtainable for the patient at time of surgery. Drains were placed in the abdomen and patient closed. She expired three hours later.

ANALYSIS OF CASES

The two fatal cases merit discussion.

Case 2 died the eighth postoperative day from overwhelming peritonitis, after what seemed to be an uneventful postoperative course. The temperature had gradually fallen from 101° on day of surgery to 99° on the sixth postoperative day. Sutures were removed on seventh postoperative day and distention was noted that day. PR was 105 and ranged from 105 to 110 until death. Bowel movements had previously been normal. Penicillin, streptomycin had been given through seventh postoperative day. On eighth postoperative day she expired within six hours after taking a sudden down hill course. Regional autopsy showed fibrinous, organized exudate over the bowel and parietal peritoneum with collections of pus in dependent areas. It is plausible that this patient had a thrombosis from pelvic veins to the lungs and expired as a result of this. No autopsy of the lungs was done. This rupture with ultimate death could have been prevented by more careful observation of this multipara in labor. The death after surgery was surprising after her initial postoperative course. No explanation can be offered with lack of autopsy material.

Case 6 was in extremis on admittance, having been in labor thirty hours and having complicating factor of toxemia present. She was classified as a severely contaminated case and had been in shock for some three to four hours when seen. Only 500 cc. blood was available for her and it is doubtful if she would have survived had there been more present. Here again the factor of delay in handling of the neglected multipara, contributed to her death.

REFERENCES

1. Whitacre, A. E., and Fang, L. Y.: Arch. Surg. 45 : 213, 1942
2. Lynch, F. G. : Am. J. Obst. & Gynec. 49 : 514-531, 1945
3. Dugger, J. H. : S. Clin. North America 25 : 1414-1424, 1945
4. Brierton, J. F. : Am. J. Obst. & Gynec. 59 : No. 1, 113-124, Jan. 195
5. Phaneul, L. E. : Am. J. Obst. & Gynec. 13 : 446-447, 1927
6. Greenhill, J. P., & Bloom, Benson : Am. J. Medical Association, 92 : 21-26, 1925
7. DeLee, J. B., and Greenhill, J. P. : Principles & Practice of Obst. 9th edition : 559-560, 1947
8. Sheldon, C. P. : Am. J. Obst. & Gynec. 31 : 455-466, 1936
9. Morrison, J. H., and Douglas, L. H. : Am. J. Obst. and Gynec. 50 : 330-335, 1945
10. Delfs, E. and Eastman, N. J. : Canad. M. A. J. 52 : 376-381, 1945
11 Bill, A. H., Barner, W. R., and Melody, G. F. : Am. J. Obst. & Gynec. 47 : 712-717, 1944

DISCUSSION

These six cases of uterine rupture occurring in a Charity Hospital where 523 obstetrical cases were delivered represents a ratio of 1.87.1 deliveries. This figure was obtained only over a one-year period but certainly merits a report with a plea for closer observation of the multiparous patients. The mortality rate of these six cases is 33 1/3 per cent which compares favorably with the reported figures. The foetal mortality was 83 1/3 per cent and no discussion was offered because of the time element in all cases (case 3) was such that the infant had either expired or been removed prior to hospital admittance.

The procedure of direct palpation of the cervix and uterine cavity in suspected cases might be mentioned. It is believed this procedure, when done under proper operating room conditions, with patient already receiving antibiotics, can contribute more to hastening diagnosis and salvage of the patient than waiting until the patient has gone progressively down hill and operative intervention forced.

CONCLUSION

Rupture of the uterus has and will continue to cause maternal and foetal death unless primary concepts of proper obstetrical care of the multipara are adhered to. Each succeeding pregnancy offers new problems and increases risk of child-bearing and makes the multipara patient as deserving of observation and consideration as the primipara.

As long as the incidence of cesarean section is increasing, the possibility of uterine rupture should be kept in mind. The uterine scar in the best hands is not an infallible one and may tear at any time during gestation.

Case No. & parity	Cause	Site	Type	Diagnosis	Treat.	Result
Case 6 Multipara	Neglected Transverse	Fundus rt. lateral	complete	Rupture of uterus	Repair of tear	Died 3 hrs. P. O. Shock Intractible
Case 1 Multipara	Neglected Transverse	Lower segm'nt ant.	complete	Rupture of uterus	Total Hyst.	Recovered
Case 2 Multipara	Version and Extraction	Posterior lower seg.	complete	Rupture of uterus	Total Hyst.	Died 8th P. O. day Peritonitis
Case 3 Multipara	Previous classical section	Classical scar	Partial	Repeat Section, tear observed	Repair of tear	Recovered
Case 4 Multipara	Brow Presentation	Lower uterine segment	complete	Rupture of uterus	Sub-Total Hyst.	Recovered
Case 5 Multipara	Cornual Pregnancy	Right cornu	complete	Rupture Ectopic pregnancy	Total Hyst.	Recoverd

DISCUSSIONS

DR. JOHN C. WEED, (Tulane University)—First, the subject of rupture of the uterus is one most doctors like to avoid since it represents a mistake in handling the patient usually. Secondly, it's a diagnosis usually overlooked most of the time and often put under other headings and the true diagnosis is not made. Third, because this represents excellent management and results in a small series of cases.

I think uterine rupture should be considered on another basis. Uterine rupture occurs as a spontaneous descent of pregnancy or by induced action. Under spontaneous or postcesarean, most occur in the multipara without any active interference. The induced ruptures refer to those cases in which the management of labor has been mismanaged by the physician in charge. Of course the induced ruptures of the uterus occur, as Dr. Middleton mentioned, in the injudicious use of pitocin and pituritrin injections to hasten labor or initiate labor.

There isn't much that one can say in the postcesarean spontaneous rupture cases because those patients, of course, have already acquired their scars and the rupture may occur with the onset of labor or even several months before labor has occurred.

I would like to mention that in the large series collected by the Beachams at Charity Hospital, three- fourths of the cases were not cesarean ruptures, and three-fourths of the cases non-cesarean, were of the induced variety. They were the responsibility of the physician managing the case. In that course full version abstraction was performed.

A woman having labor following cesarean section does not necessarily mean she won't have rupture of the uterus at a later date. There have been some successful deliveries vaginally after rupture of the uterus occurred with a subsequent labor. However, once a cesarean section always a cesarean section is a good policy. I feel that if the cervix has never been fully dilated by a previous pregnancy and delivery, that cesarean section should be employed for subsequent labor.

Secondly, if the patient is a multipara that has a descent of labor, such as a placenta previa with a second pregnancy, the possibility of vaginal delivery may be considered by the physician but the responsibility for the safety of the patient lies with the physician.

The diagnosis of rupture of the uterus again must be divided into the spontaneous variety and induced variety. The spontaneous have a severe type of pain calling attention to the fact of some descent occurring. But the most important variety is the induced variety in which the patient is largely under an anesthetic and she can't report what is happening to her. So the attention of the physician must be concentrated on the fact that something abnormal is occurring and that sign is usually bleeding from an obscure cause. Secondly, change in blood pressures and pulse rate may be important.

I would like to emphasize the diagnosis is relatively easy under such circumstances. It's simple to explore the uterine cavity and vaginal cavity in these patients who have been delivered by breech extraction or any difficult obstetrical maneuver and there's no reason why that procedure should not be done in this day and age.

We have nothing new to offer in treatment except to emphasize again that the patient who has a rupture of the uterus cannot afford to have the luxury of having her blood pressure restored to normal prior to laparotomy. Many cases are lost because of delay in an attempt to pour blood into the patient when she is losing it. Once the diagnosis of rupture of the uterus is made, replacement of blood is necessary and immediate laparotomy is very necessary.

It's important for us to realize in hospitals where such operations are done, blood should be available, and while it is virtually impossible for all hospitals to have blood available in a blood bank, the recent efforts of the American Red Cross in supplying blood in all communities should make this available to all places where obstetrics or operative deliveries are necessary.

DR. J. R. MITCHELL, (Mobile, Ala.)—As Dr. Middleton points out, when there are six ruptures of the uterus in 523 cases in one hospital in one community in one year, that we indeed, all of whom practice obstetrics, still have much to learn as far as obstetrical care is concerned. Certainly this incidence is too high and in addition I believe that under proper conditions, that in a hospital where there is adequate blood and surgical facilities available, death from rupture of the uterus is preventable.

In taking steps to combat such catastrophes I believe we have to go back to the basic principles of obstetrics such as adequate history taking, which I believe is of great importance. I believe when a patient is first seen that a meticulous history will materially aid us in overcoming the occurrences of such catastrophes as this. Age and parody of the patient are of tremendous importance, for spontaneous ruptures of the uterus occur almost exclusively in elderly multiparas. In a series of over fifty-three thousand cases at Johns Hopkins there was not a single primigravida who had a spontaneous non-cesarean rupture of the uterus.

History of previous labor difficulty, of difficult forceps, of version, tears, hemorrhage, of anything that may have contributed to injury to uterine musculature with subsequent thinning and fibrosis, helps the physician.

For the same reasons history of previous pelvic surgery should be taken, not only section but myomectomy, abortion D&C, extensive cauterization of the cervix. All of these lead to rupture.

Next is a careful and meticulous initial physical examination, and particularly the pelvic examination. I believe that's the next step in preventing these catastrophes. Notations of old lacerations, scarring, fibroids and tumors, masses which might obstruct the outlet at the time of delivery. And, of course, the evaluation of pelvic size and architecture.

It is important to watch carefully during the last three months of pregnancy for there is a high incidence of rupture of the uterus in the last trimester prior to the onset of labor. Any unusual abdominal pain or discomfort during this period must be investigated. At the time of labor conservatism and gentleness in all maneuvers is an obvious must. The trend is running to the use of intravenous pitocin and pituitrin and this procedure is not without danger.

Following delivery, whether spontaneous or instrumental, a routine examination is essential: inspection and palpation of the vulva, vagina and cervix, and if bleeding is present, or with an operative history, then I believe that one should not hesitate to invade the cavity of the uterus immediately. We must overcome our fear of exploring the uterine cavity. It's a safe procedure today.

Once the diagnosis of rupture of the uterus is made, I believe the steps in management are quite clear. I believe all patients should have been previously typed and the Rh factor determined. This will aid in getting blood quickly, for certainly blood is an important part in this department. However, it is not an essential part initially.

These patients must be operated on immediately if they are to be saved. Their treatment parallels the treatment of ectopic pregnancy. One must not wait to correct shock before attempting a laparotomy. It's illogical to inject blood if the bleeding point from the original hemorrhage is not about to be closed. Once the abdomen is opened the procedure of choice, I believe, depends on the individual case, the exact location of the rupture, the type of rupture, the degree of hemorrhage and shock, and the presence or absence of infection.

Ruptures of the upper segment can often be sutured, while those in the lower uterine segment, and particularly those where the hemorrhage has extended between the leaves of the broad ligament, usually require hysterectomy. Whether total hysterectomy or otherwise, is a debatable subject. Under normal conditions I am a firm believer of total hysterectomy, but in a patient in profound shock with great blood loss, I believe the essential problem is to control the hemorrhage completely and as quickly as possible with the least amount of additional trauma to the patient. If total hysterectomy is to be done, it should be done by only the most experienced hands and with a large amount of blood available.

NASHVILLE POSTGRADUATE ASSEMBLY

Many Mississippi physicians will find time to attend the Nashville Postgraduate Medical Assembly, to be held October 3, 4, 5, 1951, at the Maxwell House Hotel in Nashville, Tennessee. Note the full program which has been running in the advertising section. Some of the best known men from St. Louis, Chicago, Baltimore, and other places will be on this program. It will be well worth your time to take two or three days out for this meeting.

SEE YOU IN DALLAS

45th ANNUAL MEETING

SOUTHERN MEDICAL ASSOCIATION
NOV. 5-8, 1951

A MOST CORDIAL WELCOME awaits physicians of the South attending the Dallas meeting which will consist of forty-seven half-day sessions presented by the twenty-one sections embracing every phase of medical practice. In addition to these activities there will be two general sessions, the annual dinner of the association, and outstanding scientific and technical exhibits.

THE COMPLETENESS of the program and the excellence of the exhibits will again make this meeting of the Southern Medical Association the outstanding general medical meeting of the year for physicians of the South.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at Dallas a program to challenge that interest and make it worthwhile for him to attend.

MEMBERS of state and county medical societies may attend. Eligible physicians, members of state and county medical societies in the South **can be** and **should be members** of the Southern Medical Association. The annual dues of $10.00 include the Southern Medical Journal, a journal most valuable to physicians of the South, one that each should have on his reading table.

SOUTHERN MEDICAL ASSOCIATION
Empire Building
BIRMINGHAM 3, ALABAMA

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. . . . . Editor-in-Chief
MILDRED P. ANDERSON . . . . Assistant Editor
David E. Guyton, Blue Mountain College . . . . . . Peet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton . . . . Oxford
President
Dr. J. G. Thompson . . . . Jackson
President-elect
Dr. T. M. Dye . . . . Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. . . . . President
Greenville, Miss.
H. T. Smith . . . . President-elect
McGehee, Ark.
L. T. Carl, M.D. . . . . Vice-President
Jackson, Miss.
D. T. Owens, M.D. . . . . Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. . . . . Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. . . . . Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. . . . . Hot Springs, Ark.
Frank M. Acree, M.D. . . . . Greenville, Miss.
R. L. Sanders, M.D. . . . . Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. . . . . Jackson, Miss.
J. Harvey Johnston, M.D. . . . . Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

EDITORIALS

OUR PROBLEM

When all the figures are in, the death toll on Labor Day will seven hundred or more. These are tragic figures and costly to human society. The challenge to the medical profession is to cure illness, to prevent death. This challenge extends to the entire public, even as it relates to injury and death on the highways. The medical profession is doing its part in treating the injured, but it has not considered its responsibility in preventing these injuries and deaths. In order to look squarely at this problem we need to seek the causes of accidents and deaths on the highways.

When the unvarnished truth is known it will be seen that alcohol in some form is the cause of at least fifty per cent of the deaths and injuries such as we have had on Labor Day. The medical profession knows this better than anyone else if it will out with the truth. It can not further afford to shun its responsibility in this human tragedy. Some drivers may be under the influence of drugs other than alcohol. The medical profession has a right to know the extent of these addicts. The tired and exhausted person falls asleep, some too easily. Some drivers have a mania for passing cars, refusing to drive behind for a few hundred yards; others have a mania to claim every inch or more of the road on his side of the line. Many are selfish, careless, and lacking in courtesy and responsibility. Maybe it would be beyond the line of duty, but we believe the medical profession has an opportunity, if not a responsibility, to show more concern for the deaths and injuries occurring on the highway. It can at least help to warn and to educate the general public.

GP MEETING

The Mississippi Academy of General Practice is meeting at the Heidelberg Hotel Sept. 19 and 20. This is the third annual assembly. A fine program has been arranged. It will be worth your while to attend. Dr. John B. Howell of Canton is president, with Dr. S. K. Johnson, Pelahatchie, president-elect.

Drs. Frances D. Murphy, Armand J. Quick, Eric Oldsberg, and Louis Katz, the last named president of American Heart Association, are the essayists. Dr. R. B. Robins of Camden, Ark., will be the banquet speaker September 20. Everyone knows Bob. He will be fine. You can not afford to miss this meeting.

SMA

Many medical meetings are on the way. The Southern Medical Association will meet in Dallas, Texas, in November, beginning on the fifth. It is the second largest association perhaps in the nation and the very best for scientific medicine. There is a fine fellowship in the Southern. It will be good to meet in Dallas, a favorite city in the Lone Star State. Make your plans to go.

At a recent meeting of the State Board of Health, the president, Dr. Sam Echols Eason of New Albany (seated, center), was commended for his outstanding record of service. Reading left to right: (Seated) Dr. J. K. Avent of Grenada, Dr. W. H. Banks of Philadelphia, Doctor Eason, Dr. Paul G. Gamble of Greenville, and Dr. H. L. McKinnon of Hattiesburg; (Standing) Dr. Felix J. Underwood, Executive Officer, of Jackson, Dr. Estes M. Blackburn of Jackson, Dr. S. E. Field of Centreville, and Dr. R. B. Caldwell of Baldwyn. (Dr. Harvey F. Garrison, Jr., of Jackson, member of the Board, not shown).

PROGRAM

Third Biennial Meeting of American
Cancer Society, Mississippi Division
October 17, 1951
Heidelberg Hotel, Jackson, Miss.

8:00 A. M. BREAKFAST — Open Meeting of the Board of Directors

8:00—12:00 REGISTRATION—Rear Lobby

8:30—12:00 FILM: "Breast Self-Examination"—Parlor A

10:00 GENERAL SESSION—Rose Room

Mrs. Elizabeth N. Wates, Executive Vice-Chairman, Presiding

"Terminal Care"—Dr. E. R. Nobles, Chairman, Committee on Terminal Care

"Loan Closets"—Mrs. Augustus Street, Chairman, State Loan Closets

"An Education Program For the County Level"—Miss Mary Elkin, Education Chairman Lee County Cancer Unit

12:00 — 2:00 LUNCHEON — Roof

Dr. Felix J. Underwood, Executive Chairman, Presiding

County Awards—Mrs. Elizabeth N. Wates

Address—Dr. Alton Ochsner, Past President American Cancer Society

2:30 GENERAL SESSION — Rose

Miss Lucille Russ, Director of Education, Presiding

"Policies of the American Cancer Society"—Mr. M. R. Runyon, Executive Vice President American Cancer Society

"Research In Cancer Control"—Dr. John Dunn, National Cancer Institute

Discussion and Questions—Dr. R. R. Braund, West Tennessee Cancer Clinic

7:30 DINNER—Victory Room

Dr. W. H. Parsons, Chairman, Committee on Education, Presiding

"A Physician Views the State Cancer ProGram—Dr. George Twente, Jackson, Mississippi

Address—Dr. Francis M. Massie, Lexington, Kentucky

MEDICAL AND SCIENTIFIC PROGRAM FOR DOCTORS

"Malignancies of the Neck"—Dr. George Crile, Cleveland, Ohio.

"Malignancies of the Gastro-Intestinal Tract"—Dr. Francis M. Massie, Lexington, Kentucky

"The Medical Aspect to the Cancer Problem"—Dr. Fred Homburger, Boston, Mass.

MISSISSIPPI STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

SANITARY ENGINEERING ACTIVITIES

January-June, 1951

Stream pollution activities were given considerable attention during the first six months of this year. Studies of wastes from the Gulf Naval Stores plant at Gulfport, in which the United States Public Health Service cooperated, were complete in March. The field laboratories were then moved to Hattiesburg where a similar study was made of the wastes from the Hercules Power Company plant. This is also a naval stores plant using a slightly different process and making more products than the Gulf Naval Stores plant. The wastes from the Hercules plant kill fish in Bouie River occasionally, and it was desired to obtain as much information as possible concerning the composition of the wastes and their effect on the river so that corrective measures could be applied, if possible. Since reports on these studies have not yet been completed, no steps for remedial action have been taken.

Because of the major sewer extensions being made in Jackson, a comprehensive survey of Pearl River above and below the city has been started. First samples were taken on May 29. It is proposed to take weekly samples for a period of at least two months in order to have sufficient data on which to base an opinion of the effect of sewage from the city on the river. This information will be of value to the city officials in the planning relative to the need for sewage treatment.

The Division Director, during April and May, attended six regional clinics held at Clarksdale, Tupelo, Meridian, Jackson, Brookhaven, and Gulfport by the Mississippi Municipal Association. At these clinics he spoke on the subject, "Financing Sewerage Improvements by Means of Revenue Bonds." This method of financing such improvements was set up by the 1950 Legislature and provides a means for municipalities to set up the sewerage system as a utility and to charge rates for sewer service the same as has been done in connection with water service. In this way sewerage improvements can be made without resorting to general obligation bonds. Since this was new legislation, there was much discussion of the problem at these clinics. A number of sizable sewerage improvements are now under construction, and a number of others are in the planning stage, which would have been practically impossible to secure without this method of financing.

The residual spray program for mosquito and fly control has been continued in 15 counties in the Delta section. This is a slight reduction from the number of counties in which these operations were conducted last year. DDT is being used inside dwellings and chlordane in the outbuildings. Chlordane is more effective in fly control, but it is not considered safe to use this insecticide inside dwellings.

Assistance was again given to 67 towns and cities in the form of DDT technical grade powder for city-wide fogging purposes. In connection with this work, the Division continues to stress the necessity of basic sanitation, and improved garbage collection and disposal are resulting from these efforts.

Efforts in typhus control are primarily in the field of evaluation at the present time. Rat-trapping and bleeding is being done in an effort to determine what and where the remaining foci of infected rats exist in the typhus area.

Routine activities have been carried on in the field of milk and shellfish sanitation.

Personnel improvement has resulted during this period. A Public Health Engineer and a Junior Chemist were employed effective June 1, 1951. The addition of these men fills the staff of the Division for the first time since the war period.

* * * * * * * * *

INDUSTRIAL HYGIENE

Promotion of physical examination program reporting, absentee reporting, and routine factory inspections have been the primary activities of the Industrial Hygiene Division.

During the week of April 9, multiphasic screening was carried out in the Stahl-Urban Plant in Brookhaven, Mississippi. This plant has 600 employees. Dr. W. R. May, Director of Lincoln County Health Department, and the public health nurses assisted in this work. In the near future, a multiphasic screening program will be carried out in the Monticello Manufacturing Plant in Monticello, Mississippi.

It seems industry in the state is beginning to realize that the engineers in the division have a real service to offer. This is shown by the number of requests from industry to make surveys and technical studies of potential occupational hazards and to check on physical equipment. It has been hard in the past to educate industry but continual talking and offering of assistance is paying off.

During this period ten surveys have been made and eleven technical studies. All of this has been done upon request from industry. It is hoped that some time in the near future we can be kept busy on requests. The technical studies were made in a fibre board plant, tire plant, heavy machinery plant, paint shop, glass works, plant manufacturing fluorescent lights, fertilizer plants, and insecticide plant. The covered dusts, lead, solvents, ammonia, carbon monoxide, economic poisons, and petroleum hydrocarbons. The Division has been called in on fifteen different occasions for consultations in regard to use of hazardous materials, ventilation, lighting, and types of control measures to be used.

Since completing the courses in Radiological Health last October, the engineers have been lecturing to groups of nurses over the state on radioactive contamination, decontamination, waste disposal, and instrumentation. This is part of a course given the nurses in conjunction with civilian defense.

The factory inspections have been continued of those plants employing women. These inspections cover sanitation, housekeeping, lighting, ventilation and general working conditions.

With the advent of the present military conflict some of the industrial nurses are beginning to enlist for military duty, others are moving from place to place. Industrial plants have already lost some nurses as a result of this. The consultant from this division has spent time in recruiting and training new nurses to fill these vacancies and in the opening of new programs. Two new nursing programs have been started; one in Yazoo City and one in Newton. Some time has been spent with nutrition consultants in an effort to improve feeding program in two plant cafeterias.

The chemical laboratory continues to do water analysis for municipalities and private supplies that are interested in improving the quality of water for domestic purposes. Many municipal water supplies have been analyzed for the fluoride content and where this element is absent. some are contemplating the addition of same. Stream pollution work was started about the middle of May and will continue through the summer.

The laboratory was called on to do lead determinations by physicians in the city where lead poisoning was suspected. Determinations were made on samples taken from industries to support the findings made on inspections by the engineers. Freezing point determinations continue to be made on milk samples where added water is suspected. Ether extractions are done on chocolate milk samples for butter fat. All standard solutions for the hygienic laboratory are made by the chemical laboratory.

MALARIA IN KOREAN VETERAN

Health officers of all states and territories have been alerted by the U. S. Public Health Service regarding malaria among returned military personnel who have served in Korea during the past year. Dr. R. A. Venderlehr, medical director in charge of the Communicable Disease Center, PHS, wrote health officers: "Significant numbers of armed forces personnel from Korea are experiencing attacks of vivax malaria after their return to this country. These attacks may come while they are on leave or even after separation. Physicians should suspect malaria when patients who are Far Eastern veterans present "suggestive signs and symptoms." Presumably, infections were acquired last fall, although in some instances it is probable that symptoms did not become apparent until this spring—either because of prolonged incubation or because of medication that suppressed early symptoms, Dr. Vonderlehr said. He advised that when blood findings are positive or uncertain, the slides should be sent to the National Depository for Malaria Slides, Communicable Disease Center, Chamblee, Ga.

Letters were sent health officers after a high incidence of malaria among Korea veterans was reported in several states. Arkansas reported 79 cases, all confirmed by blood smear, between May 15 and July 22, while Mississippi* has reported seven proved and two probable cases since May 2. Dr. Vonderlehr stated that other cases undoubtedly will be found in every state. He urged that cases be reported promptly to local health authorities. "If competent diagnosis, adequate treatment, prompt reporting and preventive insecticiding are achieved, it is believed that the present freedom of the country from endemic malaria will be maintained," Dr. Vonderlehr wrote.

—Jour. of the A.M.A., Aug. 18, 1951
advertising page 14

*Cases in Mississippi numbered 20 as of August 20, 1951.

The Postanesthesia Observation Room*

CHARLES D. ANDERSON, M. D.
Associate Professor in Anesthesia (Rush) University of Illinois
Chairman, Department of Anesthesiology, Presbyterian Hospital
Chicago, Illinois

Anesthesiology as an art and a science has progressed tremendously in the past quarter century. Many new methods and agents have been added to the armamentarium of the anesthesiologist and, accompanying this, much physiological, pharmacological, and pathological progress has been made in understanding the physiological, pharmacological, and pathological processes arising from the anesthesia produced. With the advent of this increasing knowledge there has been a widening of the field of surgery into areas formerly denied to us. Surgery on the lungs and surgery on structures contained in the mediastinum have become possible with relative safety to the patient because anesthesiologists have translated this new knowledge into skillful management of the patient, both before and during surgery. In a similar way, more radical surgical procedures in other locations in the body have offered hope to patients otherwise doomed to an early demise. The anesthesiologist, with his increasing understanding of the many complex mechanisms making up the internal environment of the patient and the alteration in these mechanisms with the use of various drugs, can so select his anesthetic and ancillary tools that disruption of the internal environment of the patient will be minimal. The use of sympathetic blocking agents preoperatively to ward off the occurrence of arrhythmias under cyclopropane anesthesia or the use of intravenous procaine to control arrhythmias or tachycardia of abnormal nervous system origin are examples of this.

Anesthesiologists have been alert to the possible application of new scientific facts to clinical anesthesiology, which would be helpful in promoting increased safety to the patient, and in less discomfort and morbidity for the patient preoperatively and postoperatively, and in providing improved operating conditions for the surgeon.

All of this is creditable. However, for the most part this superb effort is concentrated in the preoperative and operative period. We are all familiar with the usual post-operative routine. When the operation has been completed and the dressings applied to the wound, the anesthesiologist has been withdrawing his anesthetic as quickly as possible, so the patient will have at least some of his reflexes back. Respiratory tree toilet is performed as necessary and arrangements made regarding the airway, in the hope that untoward incidents will not occur. Then the patient is sent back to his room to complete his recovery from anesthesia.

It is at this time that all too frequently difficulties arise. Due to the shortage of nurses, the patient may, by necessity, be left alone for considerable periods of time, during which time respiratory embarrassment, circulatory collapse or hemorrhage from site of operation may jeopardize the life of the patient. Even when the patient is under the constant observation of a nurse, all too frequently this job is considered a tiresome routine or too unimportant, and so the most junior nurse in training is delegated to these duties. Even graduate nurses, due to lack of training, may prove to be highly deficient in the discharge of these duties.

All of the scientific knowledge and skill used by the surgeon and the anesthesiologist is jeopardized by this haphazard postoperative management of the patient. New scientific facts are not needed to correct this situation. What is needed is a system which will provide adequate supervision of the patient until emergence from anesthesia is complete.

How, then, can this be accomplished? During the past number of years there has been a growing tendency to the centralization of these patients in small units which have been loosely termed **recovery rooms.**

Originally, the recovery room was designed to meet the need of greater nursing care for critically ill surgical patients. At this time little thought was given to the emergence of the patient from anesthesia, since it was merely an incident of the patient's total time in the recovery room. Under these circumstances, the patient would remain in this room twelve to ninety-six hours or until such time as the patient had passed the critical period following surgery. For the most part such units were only in hospitals operated at public expense. Such units were not usually found in privately operated hospitals because of the increased administrative difficulties, particularly in regard to bed allocations, and also because of the greatly increased expense which the operation of such a recovery room would entail.

---

*Presented before the Central Medical Society, Robert E. Lee Hotel, Jackson, Mississippi, April 3, 1951.

The average stay of the patient in this unit, therefore, will vary between thirty minutes and eight hours and, on the average, will be two to three hours depending upon the type of anesthesia used and the condition of the patient at the end of surgery. In most hospitals such a unit is very practical. The administrative details of organization and maintenance of the unit are relatively simple. This unit would open only during the hours of surgery and for a sufficient length of time following surgery to care for the surgical patients.

This means that the staffing of the unit would be much simpler since the unit would be open only for eight to twelve hours daily. Needless to say, the operation of the postanesthesia observation unit would be much less expensive, not only for the hospital, but particularly for the patient.

What is the need for such a unit? I am sure that all of you from time to time have received an emergency call to see a patient postoperatively, and arrived at the patient's bedside to find the patient quite blue because the nurse supervising the emergent period allowed the tongue to drop back into the throat; or at other times, to see patients where the blood pressure had dropped to critical levels. Innumerable other examples of greater or lesser importance which affect the recovery and comfort of the patient might be cited. In the postanesthesia observation unit, nurses assigned on a permanent basis must be instructed in the management of the patient emerging from anesthesia.

Specifically, this instruction should include the following details:

1. The most important phase of the patient's emergence, by far, is the maintenance of a very freely patent airway. Factors interfering with the airway, such as the base of the tongue falling against the posterior pharyngeal wall, presence of foreign material in the mouth, throat, or respiratory tree, must be immediately corrected. It should be remembered that patients recovering from anesthesia may have decreased respiratory efforts due either to the effects of the anesthetic agent or to limitations of respiratory movements by the location of surgical dressings, bindings, etc., or a combination of these. Thus, it is important that controllable factors affecting the airway should allow the patient to make the maximum use of each respiratory effort.

2. The patient may have an adequate and patent airway and still be hypoxic; thus, adequate oxygenation during emergence is of utmost importance. Cyanosis, which is a late sign of oxygen want, should not be depended upon to indicate the oxygen status of the patient. Rather, oxygen should be instituted either by mask, catheter, or tent whenever one or more of the early signs of hypoxia appear. These early signs are tachycardia, restlessness, and air hunger.

3. Pain is a factor of greater or lesser importance in the patient's emergence from anesthesia. The optimum time at which narcotics should be given for the relief of pain requires fine clinical judgement. In these patients, before consciousness is fully regained, restlessness should not be interpreted as necessarily due to pain since it may be due to hypoxia. If the narcotic is given too early, further respiratory embarrassment may be produced which would tend to perpetuate and increase the state of hypoxia in the patient, thus producing a situation which is highly undesirable.

If there is doubt as to which factor is the cause of the restlessness, the administration of oxygen should quickly determine this for you. In most instances both factors are operating; however, after the patient has become properly oxygenated it will usually be noted that a much smaller dose of narcotic is usually necessary to control the pain than was originally considered.

4. Consideration of the cardiovascular system during this period must be kept in mind and observations made as to the character and rate of pulse and the changes in the blood pressure. Supervision of the fluid therapy must be directed to avoid wide fluctuations of the circulating blood volume. Dressings must be checked periodically for gross hemorrhage from the site of operation.

Lastly, the patient must be protected from physical injury. Falls from bed, burns from hot water bottles, palsies from lying on hard objects or in abnormal positions may prove embarrassing to all concerned if left undetected.

These, then, are the things that the nurse supervising emergence from anesthesia should know. It is remarkable, but true that most nurses, student or graduate, have only a superficial knowledge of their duties in this regard. This is not a reflection on the individual nurse or on the nursing profession as a whole, but rather it represents an inadequacy in training. The medical profession generally, and the surgeons and anesthesiologists particularly, are responsible for this situation since they have not impressed the nursing profession with the seriousness of this critical period.

The postanesthesia observation unit offers many advantages. Those to the patient are obvious. Increased safety of the emergence from anesthesia is tantamount. The control of the airway, the protection of the cardiovascular system from collapse and the adequate oxygenation of the patient all contribute greatly to an uneventful and more rapid convalescence. The surgeon and the anesthesiologist are relieved of worry associated with the recovery of their patient. From the hospital's point of view there is a saving of nursing personnel and of resuscitation equipment since it is no longer necessary to make provisions for these on each of the floors receiving surgical patients. It allows the routine nursing care of these surgical floors to proceed without the interruptions which are necessary when postoperative patients are cared for on the surgical floor. When patients are cared for in a postanesthesia observation unit, other patients and relatives are spared from the distressing sights and sounds which are associated with the emergence from anesthesia.

In our experience, only two disadvantages have shown themselves. First, the hospital is deprived of the usual income from the space occupied by the postanesthesia unit. However, this loss of revenue can be decreased in two days. First, by making a charge to the patient for the service of the postanesthesia unit and, secondly, by converting single occupancy rooms into two-bed wards to make up for the loss of revenue beds. The second disadvantage is the natural concern of relatives over the patients during the long time they are away from their room. However, by close liaison between the nursing staff of the postanesthesia unit and the nursing station of the surgical floor from which the patient came, information about the patient's recovery can be relayed to the relatives.

The postanesthesia observation unit offers, at small cost, a much higher standard of medical practice and an assurance that complications occurring during emergence from anesthesia are observed and treated immediately.

Retropublic Prostatectomies

R. D. Kirk. M,D., F.A.C.S., and L. C. Feemster. M.D., F.A.C.S.
Tupelo, Miss.

Report of Eighty-Six Cases

OUR INTEREST in the retropubic method of prostatectomy began two and one-half years ago. For twenty odd years prior to this we had done suprapubic prostatectomies, more or less blindly and we felt in an un-surgical manner· Neither of us lay any claims of being urologists and wish to apologize to our urological friends for presenting a urological subject. We would also like to concede that perhaps a good number of our eighty-six cases would have had transurethral resections if they had been handled by urologists. We both are strongly of the opinion that transurethral resections should not be done or attempted by the general surgeon.

We do not offer this type of procedure as the proper one for all types of bladder neck obstruction. We are wholly in agreement that the small fibrotic gland with median bar obstruction should be removed transurethrally. Also the primary carcinomas of the prostate that have reached the stage of obstruction and have infiltrated the periprostatic region. Dr. Edgar Burns of the Ochsner Clinic states: "Prostatic hyperplasia is subject to wide variation and therein lies the reason for the variety of operative attack which has been made upon it. It seems unlikely that anyone who has acquired the skill to do an adequate tran-

---

*Read before the Section on Surgery at the annual session of the Mississippi State Medical Association, May 1951, Biloxi, Miss.

surethral resection will ever abandon that method. On the other hand its limitations should be recognized. It is our opinion that in this group of cases transurethral resection should be reserved for the small to moderate sized glands. A more satisfactory result will unquestionably be obtained if the large hypertrophic prostates are treated by some type of prostatectomy and the retropubic operation appears to have a number of advantages over other open operations".

Dr. Thomas D. Moore says: "The impression has been gained by us that the retropubic operation has definite advantages as compared to suprapubic prostatectomies. Noteworthy are the greater degree of comfort, less evidence of shock and smoother and shorter convalescence. Also, the retropubic appears more desirable than the transurethral in patients with large glands in that the operation is not as time consuming nor as difficult. From the patient's standpoint the advantages are definite in that the operation is done in one sitting, there is less postoperative bleeding, the period of convalescence is about equal, the risk is no greater, there is less discomfort in the immediate post-operative period and the functional results in the main are superior."

Preoperative Care. We consider this to be of maximum importance. The case of prostatic obstruction requires a careful general physical survey. Special attention is given to his cardiovascular system. Routine urine and kidney function tests, which include blood chemistry, NPN, and two-hour phenolsulfonphthalein tests dictate largely the length of preoperative treatment. Forty-six per cent of our cases were admitted with acute urinary retention. These, of course, had to have immediate relief of obstruction. Three of these had to have a suprapubic catheter placed in the bladder. The remainder had a Foley catheter passed through the urethra.

We feel like a digital examination of the prostate and when indicated a pneumocystogram gives us a fairly accurate estimate of the size of the gland and the type of obstruction. With us in these cases of prostatic obstruction due to a large gland it is not a case of whether we will do a retropubic prostatectomy or a transurethral resection. We know we will do the retropubic if there is no pathology to contraindicate this. That is either carcinoma of the prostate or a bladder tumor. We therefore do not cystoscope these patients with a large gland unless we have symptoms which we think might mean bladder pathology. All patients who give a history of previous bleeding are cystoscoped. We have found three cases in the last two and one-half years which are not included in this series to have had a malignancy of the bladder along with a large prostatic hyperplasia and these cases were referred to the urologist.

We drain all cases routinely through a Foley catheter for five days previously to surgery. This may be a debatable procedure but we have followed it. Some of these cases have been quite sick on admission with renal insufficiency as shown by high NPN, low PSP output, and toxic symptoms. One patient, S. L. D., age 74, was admitted with an NPN of 124 mgs. per 100 cc. and a 2 per cent two-hour PSP. He was treated for twenty days before operation but even then his NPN got down only to 90 and his two-hour PSP increased to 11 per cent. Another patient, J. P. T., age 69, was treated for fourteen days postoperatively with his NPN getting down to 84 mgs. per 100 cc. and his two-hour PSP only reaching 12 per cent. We feel like all of these cases with renal insufficiency have a stormy postoperative course and that it is imperative to try to get them in the best possible condition before surgery.

All of our cases had fluids forced. They all were started on sulfonamides on admission. A number were transfused where indicated and the cardiovascular system was treated preoperatively. They all had blood ready for surgery and postoperative treatment.

Surgical Anatomy. We are not attempting to give this group detailed anatomy of the approach to the prostate retropublicly or the anatomy of the prostate but rather a few points that have seemed to help us. The space or cavity of Retzius which consists of a rather large triangular area composed of loose adipose tissue and veins, which might be classified as parietal and visceral, proceeds from the level of the umbilicus down over the pelvic floor which means the endo-pelvic fascia reflecting from one levator ani muscle across the prostate and on to the other levator ani. The veins in this area are all very thin walled and with numerous anastomoses. Those lying in the prostate capsule and on the bladder we term visceral and those loose veins about the bony pelvis we term parietal.

The capsules of the prostate have for some time been confusing to many of us. We like to think now of three capsules. The outer and usually called false capsule is composed of the reflection of the endo-pelvic fascia that was mentioned previously across the prostate from one levator to the other. This capsule contains in its sheath the prostatic plexus of veins. A very thin capsule beneath this which is the true capsule consists of a thin fibromuscular sheath which blends in the prostate laterally and unites the two lateral halves forming the anterior commissure between the lateral lobes. At the upper end the commissure blends in with the internal sphincter fibers and the bladder musculature. At the lower end it blends in with the muscular fibers of the external sphincter. The surgical capsule which is within this and consists of thinned out normal prostatic tissue which has been thinned by the adenomatous growth of the hyperplasia.

The normal arterial supply of the prostate is from the inferior vesicle artery which usually sends about four branches penetrating the prostatic capsule posterior and laterally at about the level of the bladder neck. There are several abnormal vessels which may occasionally be encountered. The chief two are 1) an abnormal obturator artery which arises from the deep epigastric and sends a vesicle branch up the pubo-prostatic ligament to the base of the bladder anteriorly; and 2) an accessory pudendal artery which arises from the internal pudendal or inferior vesicle artery and passes forward along the lateral aspect of the penis. These abnormal arteries may or may not be accompanied by their veins and when present may be injured by the surgeon. Veins from the prostate pass out from the sides to join the prostate plexus of veins and some join directly the inferior vesicle veins. The prostatic plexus of veins arises from the deep dorsal penis vein. These veins are very extensive and lie in the false outer capsule of the prostate. They are multiple and extend upwards and near the upper part of the gland, pass laterally across the prostate anastomosing with the obturator veins and veins draining the bulb and corpus carvernosa and finally as the inferior vesicle vein enters the internal iliac.

Operative Technique. In this we follow the technique of Millin almost completely. We have used spinal anesthesia on all cases with 12 per cent having to have supplementary sodium pentothal. All cases have been given blood during operation. We are indebted to Millin for his special instruments, including his special retractor, "T" capsule forceps, bladder spreader and open end aspirator but we prefer a long needle holder with a small round needle in closing the prostatic capsule rather than his boomerang needle.

We emphasize a few points: 1) We prefer the transverse incision through the abdominal wall about 3 cms. above the symphysis. 2) We have found it pays to be very careful in dissecting through the space of Retsius to avoid tearing the parietal and vesical veins. This will save lots of time. 3) Careful mobilization of the prostate is then done with a small long gauze dissector and sponge sticks. This exposes the outer capsule of the prostate and if pre-capsular veins remain in the field they should be clamped and cut and either coagulated or ligated. Up to this point there should have been no wasted time with bleeding veins—which we did have in our first few cases. A wet sponge is then loosely packed laterally on each side to keep pre-vesicle fat out of the field. 4) Two sutures are then placed about the midline of the capsule on each side of the proposed incision and tied. These are used for traction as well as helping control bleeding. An incision is then made through the three capsules of the prostate down to the whitish adenomatous tissue. This is made about one and one-half cms. below the vesicle neck and curving slightly upward on each side of the midline. We try to make this as short as possible, first on one side and then the other, and feel like we avoid some of the veins in the endo-pelvic fascia by the position and shortness of the incision. The aspirator is used continuously during this stage and forceps ("T" capsular forceps preferably) clamp the capsule edges, controlling the bleeding. 5) Flat long scissors then dissect the adenomatous gland downward and laterally. The gland is grasped with a vulsellum forceps and elevated gently and the urethra is cut with long scissors. The gland then peels out usually very easily with traction and dissection with long scissors or the finger. We try to be careful here about tearing the capsule and would rather extend the incision laterally if necessary than to tear it. So we avoid finger dissection as much as possible. Subcervical and subtrigonal adenomata are peeled out from below with the rest of the gland. The mucosal attachment to the bladder is clamped and cut and coagulated. A warm pack is placed in the prostatic bed. 6)

The bladder is then thoroughly explored with the finger, any stones are removed, and any other pathology is investigated. 7) We then routinely remove a good-sized wedge of tissue from the posterior vesicle neck by grasping this with a long Allis clamp and using a large loop with cutting electric current. We did not do this routinely on our early cases. 8) The prostatic bed is then inspected under direct vision for remaining small adenomata which are removed if present and for bleeding points which are coagulated if active. 9) A 22 or 24 Foley catheter is then inserted and its bed distended to the desired fullness. This water is then removed noting the number of cc. of distension and the capsule is closed with a single layer of No. 0 chromic in a running suture using a long needle holder and a small round needle. We begin a suture at each lateral angle and bring them to the approximate midline tying the two sutures together. We find this easier and feel like we get our angles closed better. The two traction sutures which were placed previous to opening the capsule are tied to each other. The Foley bag is inflated and the bladder is irrigated with neutral acriflavine containing 1 per cent sodium citrate. 10) The retro-pubic space is irrigated, the lateral sponges removed and we still use sulfanilamide crystals sprinkled in the wound. A Penrose drain is placed down to the capsule and the wound closed with No. 0 chromic interrupted sutures bringing the drain out through our original incision in the midline. We have not done routine vas ligation.

Postoperative Care. These patients usually have remarkably little discomfort. We connect the catheter to a closed drainage and irrigator system when reaching the room. The solution of acriflavine and sodium citrate is used for twelve to thirty-six hours for irrigation. Usual supportive treatment is given with fluids, penicillin and sulfonamides routinely and early ambulation. The drain in the wound is removed in 48 to 72 hours and the catheter on the fifth day if there is no leakage. We have had to leave the catheter a few days longer on five cases.

In our series of eighty-six cases the average age of patients was 70 with the youngest being 57 and the oldest 87. The average preoperative stay in the hospital was six and one-half days with most of them being five days and the longest twenty days. The postoperative hospital stay averaged eleven days with most of them being eight and nine days. The shortest was seven days and the longest thirty days.

We have had no hospital deaths in the eighty-six cases. One patient, a cardiovascular patient, died suddenly on the thirteenth day two days after he had returned home. This patient was seen by his local physician only after death and no postmortem was done so we will have to say this could have likely been a pulmonary embolus. There have been no other infractions or vascular complications.

We have had only two cases of hemorrhage that required more than routine care. One of these occurred on the fourth and again on the twelfth postoperative days of the same patient. The first was rather severe and required blood transfusion, Foley catheter and bladder irrigation. His second bleeding was very mild. The other case had rather severe hemorrhage on the twenty-fifth day. Catheter had to be inserted, irrigated and left in for two days.

We have had three cases of leakage after the catheter was removed requiring reinsertion for three or four days. All cases cleared up promptly. Among our first cases we had two that developed some obstruction that required dilatation with sounds. Each one of these required only one sounding for relief. Since we began excising the wedge in the posterior vesicle neck we have had no obstructive symptoms. Also in our early cases we had two who had a good bit of trouble with incontinence for three to five weeks. Since cutting through the urethra early before traction on the gland we have been having no real trouble with incontinence.

There have been three cases of pneumonia and one of auricular fibrillation. All of these responded to medical treatment.

We have had four cases of acute epididymitis, two severe and two mild. We have not done vas ligations feeling that the antibiotics and chemotherapy would prevent this complication. The two severe cases, one of which suppurated, has about changed our mind on this, however, and we may begin doing them routinely.

Edema of the penis has occurred in three cases, one rather severe, but all cleared up very promptly and caused little trouble.

Only two cases have shown evidence of osteitis pubis or obturator neuritis. Both of these were mild and seemed more likely osteitis pubis. We have attempted to avoid traumatizing the periosteum of the pubis either with needle or instruments and retractors. One of these I feel like was definitely from retractor trauma in an obese patient.

Seven patients were really acutely ill postoperatively. These were all cases which had shown renal insufficiency before operation. Postoperatively they showed mild uremia with some delirium and usually hiccoughs. They all require a lot of attention and care. These cases impressed upon us the importance of getting these patients in the best possible condition before surgery.

In conclusion we, who did suprapubic prostatectomies for twenty years, feel like the retropubic operation has numerous advantages. 1) The approach is direct with good vision assuring complete removal of the obstructing gland and adequate hemostasis. 2) There is relative freedom from shock allowing patients who are poor surgical risks to go through the operation. 3) a minimum amount of discomfort postoperatively allows early ambulation and we feel like reduces complications. 4) The hospital stay is short and the mortality and morbidity compares favorably with transurethral resection. 5) The patients do well. Nocturia clears up almost immediately and the urine is completely clear of pus in from six to eight weeks. Also with complete removal we do not believe the patients will have recurrent obstruction in the future.

Finally, we again want to mention carcinoma of the prostate. We feel that any case suspicious of carcinoma should be referred to the urologist for transurethral resection. We are very much interested in following our seven cases of early carcinoma which we are hoping will not recur and only hope they live long enough to have an adequate time of follow-up on them.

REFERENCES

Bacon, S. K.: J. Urol., 61:75-77, 1949.

Grant, O. and Lich, R., Jr.: Trans. South Surg. Ass'n., 59:174-185, 1947.

Millin, T.: Retropubic Urinary Surgery. Also Baltimore: Williams and Wilkins, 1948.

Moore, T. D.: J. Urol., 61:46-58, 1949.

Presman, D. and Rolnick, H. C.: J. Urol., 61:59-777. 1949.

Burns, Edgar: Selected Writings, Ochsner Clinic IX — 2, New Orleans, Dec. 1950.

DISCUSSION

Dr. Gerald Wessler (Gulfport)—Drs. Kirk and Feemster have presented a series of 86 retropubic prostatectomies. Their results bespeak the value and adaptability of retropubic prostatectomy in competent hands. I share their enthusiasm for this procedure, and differ from them only in the extent to which I use it.

As a resident, in 1947, I heard Terence Millin's original presentation of his results with the retropubic method of prostatectomy. I was impressed by the claims made by Dr. Millin for this approach, and hastened to give the method a trial. After overcoming the technical difficulties of the operation, the greatest of which was the handling of the veins of the plexus of Santorini, we came to the conclusion that the retropubic method merited its acclaim. We had no special instruments, and found that none were necessary.

The retropubic method is a sound surgical procedure. It is a prostatectomy performed under vision where adequate hemostasis may be accomplished. The only method of prostatectomy to rival it in this respect is the perineal, which has for me, now, only a limited field of usefulness. It is a happy sight indeed to see the relatively clear urine in the early postoperative period of retropubic prostatectomy as compared to the more usual bloody urines after suprapubic prostatectomy. Postoperative discomfort is at a minimum and functional results are good. Osteitis pubis is a distressing, but self-limited complication, which although more frequent in retropubic prostatectomy, is not limited to this method.

Retropubic prostatectomy has taken its place as one of the four basic methods of prostatectomy. It has a wide range of usefulness for the urologist, and it has in great part usurped the position that suprapubic and perineal prostatectomy have held. I should like to set forth the indications often used for determining the applicable method of prostatectomy in the individual case:

1. Transurethral resection for the small median and lateral lobe enlargement, median bar, obstructing, infiltrating carcinoma of the prostate, and for the treatment of neurogenic disfunction of the bladder.

2. Retropubic prostatectomy is used for the larger benign prostatic enlargements. I find approximately 50 per cent of my prostatectomies are done by this method.

3. Suprapubic prostatectomy is used for the huge intravesicle prostatic hyperplasia or prostatic hypertrophy in the presence of bladder tumor.

4. Perineal prostatectomy is reserved for radical removal of the prostate and seminal vesicles for carcinoma of the prostate.

I should like to add that I fully agree with Drs. Kirk and Feemster in the use of vas ligation prophylactically.

The retropubic method is suitable not only for partial prostatectomy, but for radical prostatectomy and prostatocystectomy. For radical prostatectomy I prefer the perineal approach, for should biopsy or examination at operation reveal that carcinoma is not present, the radical prostatectomy need not be done; however, if the retropubic approach has been used, the urethra will already have been divided to expose the posterior lamella, which is the usual site of the early carcinoma, so that the operator will have already been committed to a major procedure.

I have used both the abdomino-perineal and the complete abdominal retropubic approach for carcinoma of the bladder after uretero-sigmoidostomy. I believe that the complete abdominal retropubic prostatocystectomy has been technically easier and as satisfactory as the abdomino-perineal.

Physiological Basis of the Different Types of Clinical Edema*

Arthur C. Guyton, M.D., University School of Medicine.
University, Miss.

FROM a clinical point of view, there are three general physiological causes of edema as follows: first, abnormalities at the capillary interface; second, retention of water and salt by the kidney; and, third, intracellular swelling. The etiology, the pathology, and the treatment of each of these different type of edema is a different one from the other, and, therefore, special comment must be given to each.

A. Abnormalities at the Capillary Interface. In order to discuss edema which results from abnormalities at the capillary interface it is first necessary to explain the normal dynamics of fluid exchange through the capillary membrane. At the arterial end of the normal capillary the blood pressure is approximately 35 mm. Hg., and at the venous end of the capillary the pressure is approximately 15 mm. Hg. This blood pressure tends at all times to force fluid from the capillary into the interstitial spaces. On the other hand, there is present in the plasma large quantities of protein which exert colloid osmotic pressure of approximately 25 mm Hg., which tends to pull fluid into the capillary. Thus, at the arterial end of the capillary there is 35 mm Hg. blood pressure tending to pull fluid into the capillary so that the net result is flow of fluid from the capillaries into the interstitial spaces. At the venous end of the capillary the conditions are reversed because there the blood pressure is only 15 mm. Hg., and the colloid osmotic pressure is 25 mm. Hg., this causing a net flow of fluid into the capillary rather than in the opposite direction.

It is a common error to think of the flow from the capillaries through the tissue spaces and back into the capillaries as only a trivial circumstance, for approximately 30 to 60 per cent of all the plasma entering the capillaries takes this extra-capillary route through the tissue spaces. The purpose of this flow of fluid through the tissue spaces is to provide nutrition in the form of glucose and other metabolic needs to the tissues, to supply oxygen to the tissues, and to remove metabolites such as carbon dioxide, urea, etc., from the tissues.

Ordinarily almost none of the protein in the blood passes into the tissue spaces. Therefore, the colloid osmotic pressure of the interstitial fluid is negligible or not over 1 to 2 mm. Hg. Likewise, the venous end of the capillaries is so efficient in reabsorbing the fluid which has passed out the arterial end of the capillary that, normally, essentially no pressure develops in the tissue spaces. Therefore, the so-called "tissue pressure" — that is, the pressure between the cells — is also negligible and ranges in the neighborhood of 1 to 2 mm. Hg. However, as will be seen later in this discussion, these two factors of colloid osmotic pressure of interstitial fluids and tissues hydrostatic pressure may become of considerable importance in certain types of clinical edema.

---

*Paper presented before the Northeast Mississippi Medical Society at Corinth, Mississippi, on June 12, 1951.

Another important consideration is the function of the lymphatics in the tissues. It is a common concept that the lymphatics are present in the tissue spaces for the removal of fluid. However, this is the farthest from the truth, for, normally, at least 99 per cent of the fluid passes back into the circulation at the venous end of the capillary. Therefore the question must be asked: What is the function of the lympathics? Probably the most important function is the removal of protein from the tissue spaces, for every time a small quantity of fluid passes from the arterial end of the capillary into the tissue spaces, a minute quantity of protein also enters these spaces. This protein cannot be reabsorbed by the venous end of the capillary because colloid osmotic pressure does not affect the proteins in the same manner as it does water. Therefore, there remains behind in the interstitial fluid a progressive quantity of protein. When this protein is not removed, the colloid osmotic pressure of the interstitial fluid rises very high and causes extreme disturbance of the normal dynamics at the capillary interface. Fortunately, the lymphatics normally remove this excess protein, along with other debris, from the tissue spaces.

The **first** abnormality in the dynamics at the capillary interface which will cause edema is that of **low plasma proteins.** Obviously, any condition which will cause a lowering of the plasma proteins will also cause the colloid osmotic pressure of the plasma to fall. When this falls from 25 mm. Hg., which is the approximate normal, to a level below 15 mm. Hg., progressive edema then develops. This corresponds to a fall in plasma proteins from the normal of 7 grams per cent to a level of 4½ grams per cent. It is obvious why edema will occur under such conditions, for even at the venous end of the capillary the blood pressure of 15 mm. Hg., is greater than the colloid osmotic pressure, and essentially no fluid can be drawn into the capillary. This type of edema occurs very commonly in debilitated patients, particularly in individuals living in war torn areas where the protein content of the diet is negligible, and it is sometimes known as nutritional edema. Also, a diseased patient who burns tremendous quantities of proteins for the purpose of energy will have low plasma protein edema. And, finally, many patients who lose large quantities of plasma proteins as the result of extensive burns or extensive trauma can develop this type of edema throughout the body.

The **second** abnormality at the capillary interface which may cause extensive extracellular edema is **high capillary blood pressure.** This usually is due to obstruction in the venous system, for, in such circumstances, blood entering the capillary from the arteries is unable to pass into the veins. Obviously, the pressure in the capillaries rises. This means that the normal pressure of 15 mm. Hg.. at the venous end of a capillary will rise to as high as 30 or more mm. Hg. However, the colloid osmotic pressure within that capillary remains approximately 25 mm. Hg. Therefore, even at the venous end of the capillary, fluid cannot be absorbed back into the interstitial spaces until the tissue pressure rises relatively high. The tissue pressure spreads the cells apart, increasing the quantity of interstitial fluid.

Perhaps the commonest condition which may cause a high capillary pressure is cardiac failure, for this is in reality an obstruction to the return of blood from the veins to the heart. Dependent edema of the ankles is also a result of high capillary pressure, for, whenever a person stands over long periods of time, the long column of fluid from the feet to the heart, by virtue of its weight, opposes the return of blood along the venous channels. Therefore, venous pressure in the legs under such conditions is very high, and, obviously, capillary pressure is still a little higher. Finally, a type of high capillary pressure edema which should be mentioned is ascites, for the peritoneal cavity is actually an interstitial space, the filling of which is governed by the same laws as those which apply to the intercellular spaces themselves. A very common condition which causes edema of the peritoneal cavity, or, in other words, causes ascites, is cirrhosis of the liver which causes venous obstruction and consequently high capillary pressure throughout the peritoneal cavity.

The **third** abnormality in the dynamics at the capillary interface which may cause edema is **lymphatic obstruction.** It was noted above that the removal of protein from the tissue spaces is perhaps the major function of the lymphatic system. When this protein is not removed, it collects in greater and greater quantities until the colloid osmotic pressure exerted by the protein in the interstitial fluid may approach the colloid osmotic pressure exerted by the proteins in the plasma. In other words, this colloid osmotic pressure of the interstitial fluid may rise as high as 20 mm. Hg. Therefore, at the venous end of the capillary there will be 15 mm. Hg of blood pressure tending to make fluid leave the capillary, 20 mm. Hg., of tissue colloid osmotic pressure tending to make fluid leave the capillary, but only 25 mm. Hg. colloid osmotic pressure in the plasma tending to pull the fluid back into the capillary. Therefore, it is obvious that even at the venous end of the capillary fluid will not be reabsorbed to an appreciable extent into the circulation. Therefore, progressive edema occurs.

The commonest clinical condition which causes lymphatic obstruction is filariasis which is found to an extensive degree in tropical parts of the world. The filaria, over a period of years, progressively block lymph nodes which drain peripheral parts of the body, particularly the legs, occasionally the arms, and occasionally the scrotum. This edema, known as elephantiasis, is probably the most severe that is known, for a leg may become as big in circumference as an entire body, and the scrotum has been known to fill with edematous fluid to such an extent that it drags the ground. Also, treatment is extremely disappointing for there is no means by which the lymphatics can be restored. Operations to remove the large amount of edematous subcutaneous tissue have been only slightly successful because the edema tends to develop a second time, and the procedures necessary are very extensive. In addition to filariasis, removal of lymph nodes for the treatment of cancer occasionally causes sufficient lymphatic obstruction that edema develops. This is seen most often after radical mastectomies in which case the arm will remain edematous for several weeks to several months. However, in these cases, the remaining uninterrupted lymphatic channels can usually enlarge to take over the loss of primary channels.

The **fourth** abnormality at the capillary interface which may cause edema is **increased capillary permeability**. This is most often seen in allergic conditions. When an allergin enters the body by an appropriate portal, it reacts in some abnormal manner with the antibody system of the tissues to produce, instead of simple neutralization products of the allergin, a small quantity of histamine or histamine-like substance. The histamine in turn acts on the wall of the capillaries to cause enlargement of the pores. When these pores are greatly enlarged, the plasma protein molecules can then pass through the capillary membrane, so that colloid osmotic pressure which is normally exerted within the capillary falls drastically from 25 mm. Hg., to levels as low as 5 to 15 mm. Hg. Obviously, at such low levels, fluid cannot be reabsorbed with ease at the venous end of the capillary.

The whelps of urticaria are localized areas of edema due to this allergic response. On the other hand, anaphylactic shock may be associated with the generalized loss of fluid from the circulation over the entire body. Finally, in serum sickness very extensive edema may occur in localized or generalized areas of the body. Other conditions which may cause increased capillary permeability are circulatory ischemia and anoxia. These cause the edema which occurs distal to an embolus in a peripheral artery. Also, edema may occur in circulatory shock as a result of ischemic capillary damage. When massive transfussions are given to patients with shock who have already suffered such capillary damage, most of the fluid passes immediately into the interstitial spaces and is not retained in the circulation.

B. Fluid and Salt Retention by the Kidney. The second major cause of edema is fluid and salt retention at the kidney, which may result from kidney destruction or simply abnormal function of the kidney. Obviously, any condition which destroys portions of the kidney, whether it be the entire kidney, the nephron units, or portions of the nephrons, can cause diminished excretion of fluid and salt. It should be noted that when the kidney is not functioning properly as a result of structural damage, not only is sodium and chloride retained, but other constituents of urine such as potassium, urea, creatinine, uric acid, etc. are also retained in the circulatory system. This gives the clinical picture of uremia and may cause many other effects besides simply those of edema.

On the other hand, there are several different types of abnormal functions of the kidney which cause retention principally of fluid and sodium chloride. These are, particularly, **congestive heart failure** and **hormonal abnormalities.** In congestive heart failure the low cardiac output from the heart causes extreme vasoconstriction in the kidney followed by diminished output of urine and, consequently, a retention of both fluid and salt.

It has already been noted in the above discussion that congestive heart failure causes an elevated venous pressure which in turn causes high capillary pressure and progressive edema. Now it is noted that congestive heart failure also causes fluid and salt retention by the kidney. When this fluid and salt is retained it increases the blood volume, which increases the venous pressure still more, and this in turn increases the capillary pressure. Thus, the edema resulting from cardiac failure is caused by venous obstruction and fluid and salt retention. The increased resistance of the heart to venous return cannot be treated clinically, but the fluid and salt retention at the kidney can be prevented by the administration of powerful diuretics. Ordinarily, in mild cases of congestive heart failure, the xanthine drugs are satisfactory in controlling this fluid and salt retention, but in severe cases of congestive failure it becomes necessary to use the most powerful diuretics known, namely, the mercurial diuretics.

It should be noted that the retention of fluid and salt by the kidney is not altogether harmful when a person has a weak heart because an elevated venous pressure causes greater return of blood to the heart. Even a weak heart can pump a normal amount of blood to the body when there is a high venous pressure to prime the heart. Therefore, as long as the edema from the congestive heart failure is not causing distress, it appears best not to attempt extensive treatment simply because of mild edema or because of an elevated venous blood pressure.

When failure of the heart is principally in the left ventricle rather than the right ventricle, blood returning to the heart from the systemic circulation is pumped immediately into the lungs by the normal right ventricle, but. because of the weakness of the left ventricle, it is difficult for this blood to leave the lungs and be returned to the systemic circulation. Therefore, leftsided heart failure, obviously, causes extensive **pulmonary edema,** and this is far more serious than is systemic edema. Occasionally, it is necessary to resort to heroic measures such as venesection in order to save the patient's life when pulmonary edema becomes severe. This, unfortunately, reduces the cardiac output and therefore causes a certain amount of relative ischemia throughout the body. However, in these particular cases it is necessary to choose the lesser of two evils, for pulmonary edema can very readily be lethal whereas mild ischemia of the body is not

Most of the **steroid hormones produced by the adrenal and sex glands** cause reabsorption of salt by the distal tubules of the kidney, and, when this salt is reabsorbed, either fluid is reabsorbed along with it or the individual becomes thirsty and drinks more fluid to dilute the salt within the circulatory system. Therefore, the net result is that the retention of salt increases the quantity of extracellular fluid. Particularly does this occur in **Cushing's** disease in which a tumor of the adrenal gland produces excessive quantities of adrenocortical hormones. In about half the cases these tumors are non-malignant and can be removed with relative ease.

Another much more common hormonal type of edema is that occurring in **toxemia of pregnancy.** During pregnancy, very large quantities of progesterone are produced by the placenta, and it is found that progesterone is almost as effective in causing reabsorption of salt by the distal tubules as are the adrenocortical hormones. In this particular instance there is no possible means, except abortion, of ridding the body of the excessive hormone. Therefore, the only treatment is restriction of salt in the patient's diet. The question arises whether or not it is necessary to restrict water as well as salt, and this is a difficult question to answer. In animals, though the effect has not been proved in human beings, one can actually wash salt out of the body by administering large quantities of water, for this water passes through the kidneys within 1 to 12 hours after injection, carrying with it considerable quantities of salt. Therefore, it is doubtful whether or not the quantity of water intake by the individual makes an appreciable difference in the quantity of edema in toxemia of pregnancy or in any related hormonal conditions. On the other hand, the quantity of salt ingested seems to be the factor which determines the total quantity of edema which will develop. Therefore, at present, it seems advisable, at least in mild cases of toxemia, to restrict only salt and not water because many complications such as infection of the urinary tract can result from water restriction.

In fluid and salt retention the first thing that occurs is an increase in blood volume. This causes increase in venous and capillary pressure, and, consequently, fluid leaks into the interstitial spaces. Most of the edema which results from fluid and salt retention is usually extracellular in nature. However, in certain types of fluid and salt retention edema, such as that resulting from destruction of kidney tissue, the retention of other elements such as potassium can cause enlargement of the cells as well as increase in the extracellular fluid. Therefore, in such conditions as this, the edema may be both extracellular and intracellular.

C. Intracellular Edema. With the exception of the mild intracellular edema which may occur concurrently with fluid and salt retention in kidney disease, all of the different types of edema considered thus far have been of the extracellular type. Under certain conditions there may occur a predominant picture of swelling of the cells themselves. This brings up an entirely new problem, for cells usually do not swell as the result of simple fluid and salt retention, and they do not swell as the result of abnormal capillary dynamics. Therefore, swelling of cells appears to be due entirely to **intracellular** abnormalities. Most frequently this swelling occurs as the result of toxins and other destructive agents on the cells. Though it cannot be proved definitely, the best explanation for intracellular edema seems to be autolysis of proteins. Whenever toxic or heat or mechanical injury to a cell occurs, the very large protein molecules, having a molecular weight of around 200,000, may autolyze into many small compounds having a molecular weight of 100 or more. Therefore, a single protein molecule can form as many as 2,000 breakdown molecules. It will be remembered that the effective osmotic pressure within a cell is dependent upon the concentration of molecules within that cell rather than upon the size of the molecules. Therefore, when a single protein molecule splits into 2,000 smaller molecules, the osmotic pressure increases many times. Thus, autolysis of even a small number of protein molecules can cause cellular swelling, and, when marked autolysis of the proteins occurs, it is readily possible for the cells to swell to such an extent that they burst.

The edema of inflammatory processes is principally intracellular in nature, and the widely used pathological diagnostic term, "hydrotropic degeneration", means in many, if not most instances, simply a watery swelling of the cells to the extent that the chromatin material becomes disorganized. In inflammation other damage besides intracellular edema may also occur in the tissues to cause edema. First it is found that toxins or heat or other types of injurious agents will cause increased permeability of the capillaries. This in turn allows extensive leakage of protein into the tissues, and this may become coagulated so that the interstitial spaces and the lymphatics become plugged, causing lymphatic obstruction edema. Thus, it can be seen that at least three different types of edema play a part in inflammation: first, intracellular edema; second, increased capillary permeability edema; and, third, lymphatic obstruction edema.

The terms, "pitting" edema and "brawny" edema, are very frequently used in clinical medicine. When the examiner can press deeply into an edematous area and mobilize fluid from beneath his finger to another area, the edema is pitting. This means that fluid can flow freely through the tissues, and it occurs invariably with extensive extracellular edema. On the other hand, intracellular edema is of the brawny type, for the cell membranes are extremely strong despite the popular concept of their fragility. Therefore, pressure over a brawny edematous area will not mobilize fluid from the cells. Also, in inflammation, which is a composite of extracellular and intracellular edema, the edema is usually of the brawny type, for the extracellular fluid in such instances cannot be mobilized from one area to the other because of the plugging effect of coagulated protein in the tissue spaces.

Summarizing, the different types of clinical edema, classified on the basis of their physiological cause, have been presented. First, edema may result from abnormal transfer of fluid between the capillaries and the tissue spaces because of low protein in the plasma, increased permeability of the capillary membrane, lymphatic obstruction with consequent increased protein content of the tissue fluid, and high capillary blood pressure. Secondly, edema results frequently from fluid and salt retention by the kidney, and this may occur because of extensive kidney damage, depressed kidney function as the result of vasoconstriction during congestive heart failure, and increased reabsorption of sodium chloride by the distal tubules of the kidney in response to steroid hormones produced by the adrenal and sex glands. Thirdly, intracellular edema probably results from autolytic processes within the cells, these causing the breakdown of protein molecules into numerous smaller molecules with a consequent increase in the osmotic pressure within the cell.

The Diagnosis and Treatment of Brucellosis

TOXEY E. HALL, M.D.
Belzoni, Mississippi

INTRODUCTION:

Brucellosis is a specific infectious, though insidious, disease of animals and man caused by a coccobacillus of the generic term Brucella. The three known species of this genus are: Brucella abortus, which causes Bang's disease in cattle; Brucella melitensis, or Caprine, which causes Malta fever, or Mediterranean fever in goats; and Brucella suis, which causes contagious abortion in hogs.

BACTERIOLOGY: Brucella melitensis, the first to be isolated, was named Micrococcus melitensis, and it was not until Brucella abortus was isolated and identified as a bacillus that it was decided that melitensis though short and coccal in shape, was in reality a bacillus. These organisms resemble diplococci as they divide across the middle and remain as end to end pairs until almost ready to divide again. They may be as great, or nearly so, in width as in length. All three of the Brucellae are smaller than any of the Gram-negative true cocci, gonoccocci, meningococci or pneumococci. Brucella suis is longer, and always occurs in rod-form.

HISTORY: The Epidemica of Hippocrates includes significant references suggestive that this disease dates back as far as 450 B. C. Moscall in 1567 referred to the infectiousness of abortion in cattle. Accurate history of brucellosis began with Marston in 1859 who studied the disease intensively during the Crimean War at the important British naval base on the island of Malta in the Mediterranean Sea. In 1886 Dr. David Bruce discovered the causative organism in sections from the spleen of a patient who had died on the fifteenth day of his illness. Because of the significance of Dr. Bruce's discovery, the organism was named Brucella, and the disease, brucellosis. In 1904 he headed a commission of the British government to find the source of the disease and measures for its prevention. After eliminating such possible sources as insects, air, sewage, and dust, and while using goats, the most plentiful animal on the island as guinea pigs, he found that the goats reacted to his agglutinin tests, and that blood cultures from some of the animals were positive. Thus the sources of brucellosis stood revealed. Control of the disease was readily accomplished in Malta by simply boiling all milk used for human consumption. For his brilliant work Dr. Bruce was knighted by the king of England and became Sir David Bruce.

In 1905 an Army nurse in Washington, D. C., had the first recognized case of brucellosis in the United States. Also in 1905 an agent of the United States Bureau of Animal Industry was sent to Malta to purchase milch goats. Sixty-one female and four male goats were brought back to the United States. While crossing the Atlantic the milk from the goats was consumed by the members of the crew of the ship, the *St. Andrew.* Many sailors became sick 18 to 24 days after leaving Malta, and clinical diagnoses of brucellosis were made.

English practitioners wrote in 1866 of "atypical typhoid" or "typho-malarial fever" in patients who had been invalided home from the Mediterranean. During the American Civil War 1861-1865 Woodward noted an illness among soldiers which he termed "typho-malarial fever". As early as 1881 "malarial continued fever" was prevalent in the Mississippi Valley.

SYMPTOMATOLOGY: The acute attack simulates influenza with malaise, rigors, fever, aching muscles and joints, sweating, lassitude, weakness, nervousness, and mental depression. The original attack usually lasts two to four weeks from which recovery is invariably slow. This initial attack may be relatively mild, and unrecognized or undiagnosed, with remissions of two to four weeks or more, during which time the patient is relatively free of symptoms, but never quite completely recovers. Subsequent waves of the same and/or other symptoms follow, invariably including low-grade fever, weakness, and mental depression, often to the point of despair. Many people suffering with brucellosis have been branded as neurasthenic, psychoneurotic, or even psychotic. Because of the profound mental depression it may be apropos to ask ourselves how many suicides or attempted suicides are due to this disease, and how many people languish in mental institutions harboring Brucellae in their reticuloendothelial systems.

Brucellosis does not produce abortion in women any more frequently than other bacterial infections.

---

*Read before the Delta Medical Society, April 11, 1951.

INCIDENCE: There are no accurate statistics showing the incidence of the disease in the United States because it is difficult to diagnose accurately. Probably many times as many cases remain unrecognized as are diagnosed and reported.

DIAGNOSIS: A carefully recorded history of the symptoms following the ingestion of raw milk or milk products should be suggestive of the diagnosis of this disease. Unfortunately, many cases are regarded as nothing more than an unusually unresponsive case of flu until the occurrence of the second or third wave of symptoms. The agglutination reaction, similar to the Widal test, is definitely positive only during the first month or two after infection. Therefore, we might do well to obtain Kiedel tube specimens on all but clear-cut cases of influenza. Blood culture may be found more frequently positive during the acute exacerbations, or waves, than during remission. Intradermal brucellergen tests are of value, but somewhat less reliable, because, as with the tuberculin skin test, a positive reaction indicates only that at some time during his life the patient's body has harbored the organism.

PATHOGENESIS: All organs of the reticulo-endothelial system may be invaded by Brucella, including spleen, liver, kidneys, intestines, bone marrow, and lymphatics, embedded within the parenchymal cells of these organs where parasitism and proliferation occur. As the parenchymal cells are non-phagocytic, there is a proliferation of the epitheliod cells without necrosis or caseation. This represents a desirable, specific, and efficient defense mechanism of the host. Joint pain may be a constant symptom during acute attacks, though it has never been known to result in clinical arthritis. Involvement of vertebrae may induce the symptom complex of herniated intervertebral disc or sciatic pain. Sub-acute bacterial endocarditis has developed numerous times during the course of the infection with brucellosis.

TREATMENT: Prophylactic-boiling or pasteurization of milk and its products entirely controls the disease and prevents its spread. It has not been known to be passed from one human to another. The disease spreads through herds as the animals ingest the excreta of other animals while grazing. Organisms remain viable 4½ hours when exposed to direct sunlight, several days in a dung-heap in the pasture, and weeks or months in a shaded or damp stable. Skin-testing of dairy cattle and elimination of reactors by selling the animals to government-inspected packing houses effects satisfactory control of the disease. All aborting cattle, swine, and goats should be considered as having brucellosis until proved otherwise. This disease commonly causes abortion in cows and sows, but rarely in mares and women.

TREATMENT: Therapeutic — In mankind there is a definite natural resistance, especially during childhood. There is also a low incidence of infection in exposed adults, due to individual resistance. Were it not for this observed fact the disease might have long since become pandemic.

Throughout the history of this disease there has been no specific treatment. Fortunately most cases have recovered completely from the acute forms with supportive treatment and rest in bed. Avoidance of exhaustion is of utmost importance. Desensitization by injection of minute quantities of killed Brucellae or products of the organisms has been extensively used with variable and questionable results. Penicillin has no appreciable effect on the course of the disease. Sulfadiazine alone or dihydrostreptomycin alone produces no benefits. However, these two drugs when employed simultaneously in doses to the point of tolerance have produced most encouraging amelioration of symptoms in several clinics. The recommended dosage is dihydrostreptomycin 0.5 gm. intramuscularly four times a day and sulfadiazine 6 to 8 gms. or more daily for two to four weeks. Aureomycin and chloromycetin have proved beneficial in the acute form of the disease, and the use of either of these drugs combined with dihydrostreptomycin has proved most encouraging. The suggested dosage is aureomycin 750 mgm. (3 capsules) every six hours, together with dihydrostreptomycin 1 gm. intramuscularly twice a day for 12 to 14 days, or longer. The patient takes his capsules at home, and reports for his shots morning and evening. Nausea may be prevented by having the patient swallow his capsules with milk, which does not interfere with the absorption of aureomycin or chloromycetin as do the alkalizers.

There is no immunization against brucellosis.

SUMMARY: A review of the history, symptomatology, pathogenesis and treatment of the disease brucellosis is presented.

Two cases, related as to origin, are reported.

Case No. 1 was that of a 38-year-old white housewife who in September 1948 had an unusually severe attack that was considered and treated as influenza with violently sore and inflamed throat, fever, rigors, headache, cervical adenitis, bronchitis, and generalized malaise and weakness. From this attack she did not recover for a full month and after only partially regaining her strength she experienced during early November a second attack characterized by fever, headache, abdominal cramping, pain and tenderness in splenic region, subcutaneous inflammatory nodules in left deltoid area, nausea, vomiting, lassitude, and weakness. As previously she was treated with sulfadiazine, penicillin, symptomatic and supportive measures. This illness lasting two weeks began about December 15, 1948, featuring aching in chest, nervousness, mental depression, low grade fever, nausea, and vomiting. During this wave the patient was hospitalized at a medical center where all findings were said to be within normal limits, and blood culture and agglutinations for brucellosis were negative. The patient was sent home with a diagnosis of neurasthenia. With the fourth wave of symptoms in February 1949, after eliminating all other similar conditions, and obtaining a highly positive brucellergen intradermal sensitivity test, a clinical diagnosis of brucellosis was made. A two-week course of sulfadiazine and dihydrostreptomycin produced decided improvement. This was followed by six months of continuous treatment with aureomycin, 750 to 1500 mgm. daily. During this period there were only two light waves of symptoms. During the year 1950 there were also only two light waves of symptoms, and the patient became pregnant. However, in January, 1951, twenty-eight months after the initial wave of symptoms, she developed uterine cramping, and abscess-like pain and tenderness in some uterine fibrous nodules which were thought to be brucellomata. Large doses of aureomycin, progesterone, and sedatives had no appreciable effect on the progress of labor in the expulsion of the fetus. Blood agglutinations for brucellosis were positive in 1:160 dilution. The uterine nodules diminished rapidly during the puerperium, and have produced no further discomfort. This patient reported having received the gift of several pounds of country butter from a dear friend in August 1948.

Case No 2. In July 1949 this patient, a 42-year-old house-wife, returned from her home in a distant state to visit her mother as usual during the months of July and August, hoping that her stay in the country would help her regain her stamina lost during the numerous waves of illness she had experienced during the previous ten months. She had become ill on the train while returning from her vacation the last day of August, 1948. The initial attack was characterized by violently sore throat, rigors, high fever, muscular aching, and profound weakness. Symptomatic treatment for influenza was instituted by a physician. Only incomplete recovery was noted, same everlasting weakness, nervousness, and mental depression. Blood cultures and agglutinations for brucellosis were negative. The brucellergen intradermal sensitivity test was violently positive. This patient had very little tolerance for aureomycin. Desensitization with brucellergen therapeutic was carried out for a period of twelve months with complete remission. This patient recalled that her mother's cow had lost two calves by abortion, the last having been in July 1948. It was also established that this patient's mother was also the dear friend who had brought the gift of fine yellow country butter to the patient of Case No. 1.

Auricular Flutter*

JETSON PERRY TATUM, M. D.†
Meridian, Miss.

IF WE are confronted tomorrow morning at two o'clock with a patient complaining of a very rapid beating of the heart, what are we going to do about it? This is a common occurrence that happens to all of us. First of all, we are going to take the patient's blood pressure, listen to his heart and lungs, and question him a bit as to whether this condition started suddenly, whether he has had it before, and ascertain other pertinent facts of the history. With this brief amount of information, we are able to draw some definite conclusions. First of all, if the blood pressure is within reasonable limits, if there is no associated pain, and if there is no sign of congestive failure, then we are reasonably sure that our patient is not going to die. This is a matter of some relief both to us and to the patient. We feel now that we are dealing with some form of paroxysmal rapid heart action, and we may settle down to determining as best we can what form of such a heart action we are dealing with, and what we may do about it.

We already, by virtue of our brief examination, have certain worthwhile information at hand. We know, first of all, that our patient's heart rate is quite rapid. We have counted it and it may be 160, or it may be 200, or it may be so fast that it can't be accurately counted. We know, also, by virtue of this same examination, that this heart action is regular or irregular. With this modest fund of information, our field of inquiry has been narrowed considerably. We may feel with some degree of assurance, that we are dealing with a form of rapid cardiac action that in all probability is of auricular origin. We may feel that assurance simply because the odds in any particular case are markedly in favor of such being the case. Of the various forms of rapid heart actions of auricular origin, there are three types that we will want to consider seriously. By far the most common form is paroxysmal auricular tachycardia. The next most common form is auricular fibrillation, and the least likely form or the least common form is auricular flutter.

---

† From the Department of Medicine, Rush Bros. Clinic and Rush Memorial Hospital, Meridian Mississippi.

*Read before the Section on Medicine at the Mississippi State Medical Association, May, 1951, Biloxi, Miss.

Although it is quite difficult to differentiate these three entities at the bedside, there are significant points of differentiation which are worthwhile.

We have already noted in our examination whether the rhythm is regular or irregular. Let us assume, therefore, that although we found the heart rate to be quite rapid, that there is a perfectly regular rhythm. That fact alone promptly rules out auricular fibrillation and leaves us to consider either auricular flutter or auricular tachycardia. As every physician knows, the heart rate in auricular tachycardia is fixed and unchanged and does not vary with rest, exercise, emotion, or excitement. It stays the same. Furthermore, this condition usually responds to one or more of the many simple procedures that have been advocated for treatment — sinus carotid stimulation, ocular pressure, holding the breath, forceful expiration against a closed glottis, induction of nausea, etc. The rhythm of auricular flutter, on the other hand, is quite undisturbed by any of these procedures. By such procedures there may be a slight lessening of the heart rate while the stimulation is being applied, but it does not alter the rhythm and the original rate immediately returns on stopping the particular procedure. Hence, we can differentiate pretty well whether we are dealing with a flutter or a tachycardia.

Now, let us suppose that the rhythm noted on our examination was irregular. That makes our diagnosis a little tougher. Of course we can immediately rule out paroxysmal tachycardia because the rhythm in this condition is always perfectly regular. But we can not rule out either fibrillation or flutter. Now flutter usually produces a regular rhythm, but it doesn't have to, and it may produce a very irregular rhythm, while of course fibrillation always produces an irregular rhythm. The only point at the bedside that is of much value is the fact that the irregular rhythm which may be present in flutter, is seldom the gross, total, and complete irregularity that is always present in fibrillation. We may suspect the difference between the two at the bedside, but we can't prove it. In the final analysis differentiation can only be made with the aid of an electrocardiogram.

The reason, of course, that there are these points of differentiation between flutter, fibrillation, and tachycardia, that we may recognize at the bedside, is because these three conditions, although similar, have different origins and different mechanisms.

In auricular tachycardia the cause of the rapid heart rate is an irritable focus with a high degree of rhythmicity which may be located in the auricular muscle or in the sinus node itself. In this case, the pacemaker "fires off" with a rapid but regular series of impulses, to each one of which the ventricles respond with a beat. Therefore, in this case, the auricles and the ventricles are beating together, are beating very rapidly, and are beating very regularly.

In auricular fibrillation, on the other hand, the cause of the arrhythmia is a wave of excitation which develops in the auricular muscle and which pursues a very rapid but irregular course around the entire auricle. This wave of excitation is so rapid that the auricles no longer contract or beat firmly, but simply "fibrillate" or quiver like a bowl of jelly. The impulses passed from the fibrillating auricles bombard the ventricles so heavily, that the ventricles can respond to only a portion of them. The ventricles will respond as often as they can, but the resultant rhythm is totally and grossly irregular.

In auricular flutter, as in fibrillation, the pacemaker is a circus movement or a wave of excitation in the auricular muscle. However, in this instance, the circus movement is usually confined to a small ring of muscles between the superior and inferior vena cava. This circus movement or wave of excitation then fires impulses to the AV conduction tissue at a rate approaching 350 a minute. The AV conduction system will not allow such rapid impulses to pass down to the ventricles. Ordinarily, this results in some degree of AV block, most frequently in 2 to 1 block, in which case the ventricles beat at only half the rate of the auricles. In most cases the ventricular rate is perfectly regular. However, if there is some irregularity in the refractoriness of the AV conduction system, then an irregularity in the degree of block will result with a variable 2 to 1, 3 to 1, or 4 to 1 block, and hence, an irregular ventricular rhythm. In such instances, auricular flutter may closely resemble clinically an attack of auricular fibrillation. Even so, there is not the total gross irregularity that is present in the latter condition.

Now, this discussion was supposed to be concerned with auricular flutter, but up to the present time it has been equally concerned with auricular tachycardia and auricular fibrillation. It also began by asking "what are we going to do about it"?

So let us assume that we have arrived at a tentative diagnosis in this patient of auricular flutter. We have carried him to the hospital and secured an EKG which confirmed the diagnosis. Now, what are we going to do about it? Unlike the treatment of auricular tachycardia in which there are a large number of measures which may be effective in relieving an attack, there are only two measures that are of value in the treatment of this condition, the use of digitalis or quinidine. Some patients will respond to digitalis, others to quinidine, and there is no great choice between the two. It is probably wise in most instances to use digitalis for several reasons. First, more doctors are familiar with the use and actions of digitalis than with quinidine. Secondly, digitalis would be more apt to control an incipient congestive failure than would quinidine. However, in most cases there is no particular choice between the two.

As has been suggested above, in the average case of auricular flutter, the ventricular rate is regular at about 170 or 180 beats per minute. When digitalis is administered in proper doses, this ventricular rate slowly decreases. Since the auricular rate is not disturbed by the actions of the digitalis, this means that an increased degree of block must result. From the original 2 to 1 block there comes a 3 to 1, 4 to 1, or perhaps even a 6 to 1 block as the rate progressively slows. If the block is constantly the same, the ventricular rhythm remains regular. If the block is variable, the ventricular rhythm is irregular. Digitalis should be continued until the ventricular rate is 70 or 80. At this point the ventricular rate may become suddenly and grossly irregular, indicating that an auricular fibrillation has been produced. If digitalis is now omitted, ofttimes within a day or two, the heart will revert to a normal sinus rhythm, in which case the sequence of events is from auricular flutter to auricular fibrillation to normal rhythm. In some instances the auricular fibrillation may be persistent or the rhythm may change back to an auricular flutter. In any case the ventricular rate is slowed and the patient is benefited thereby.

Quinidine acts more directly than digitalis to restore a normal rhythm. Quinidine acts directly on the auricular muscle to increase its refractoriness by means of which it may halt the circus movement in the auricle which tends to perpetuate the flutter. By halting this circus movement, a normal rhythm may be restored. There is no set plan for the administration of quinidine. If one is able to keep the patient under very close observation, 6 grains of quinidine may be given as often as every 2 or 3 hours. After several doses one may find that the abnormal rhythm has ceased, and a normal rhythm of 70 or 80 per minute is now present in its place. At that time the quinidine is discontinued. If the patient cannot be kept under very close observation, it is perhaps wiser to start with smaller doses which can be continued with safety over a longer period of time. For example, one may order 3 grains of quinidine every 4 hours, and if no changes have occurred in the rhythm at the end of 24 hours, the medication is then ordered for every 3 hours. It may then be further increased by adding 3 or 6 grains daily, if necessary, until the normal rhythm is restored.

The mechanism of the changes from a flutter rhythm to a normal sinus rhythm is usually as follows: The increasing accumulation of quinidine slows the auricular rate gradually from its initial level of from 340 to 350 per minute. Since ordinarily a 2 to 1 block is present, the ventricular rate slows in proportion to the auricular rate. When the auricular rate slows to 200 or less, one may find by close observation that the ventricular rate rises suddenly to equal the auricular rate. This happens because the ventricle can ordinarily respond to auricular impulses which are not faster than 180 to 200 per minute. When this happens, the 2 to 1 block changes to 1 to 1 block and the auricles and ventricles are beating together, although the flutter mechanism is still present in the auricle. The increasing accumulation of quinidine then slows the auricular rate more and more until the rate usually falls to around 140 to 150. At that point the circus movement in the auricle may suddenly cease.

That leaves the heart without a pacemaker for a second or two and the heart stops. The SA node then takes over and the heart resumes beating at a normal rate and rhythm.

These changes are difficult to detect accurately by clinical methods only, and should be checked at frequent intervals with electrocardiographic tracings.

Now, I would like to present briefly a report of a case of auricular flutter. This case is chosen, not because it followed the pattern that has just been outlined, but because it does not follow this pattern. As in so many other instances in the practice of medicine, the cases we see often do not follow the accepted or textbook pattern.

CASE REPORT: — Mr. S. B. W., 46-year-old white male, was admitted to Rush Memorial Hospital on August 30, 1950, complaining of palpitation of the heart with irregularity which produced a feeling of uneasiness. There was no associated pain. This episode had its onset on the morning of August 29, 1950, with a sudden sensation of smothering and a very rapid beating of the heart. The patient had had several episodes of palpitation in the past, which began suddenly and ended suddenly, but none had been as severe or prolonged as the present episode. Physical examination on admission was entirely normal with the exception of the cardiac findings and routine laboratory work was normal. On examination of his heart, the blood pressure was 106-60 and his heart was not enlarged. There were no murmurs and the heart tones were of good muscular quality. The rhythm was moderately irregular with an average rate of 112.

An electrocardiogram was ordered which showed an auricular flutter with a variable AV conduction rate and an irregular ventricular rhythm averaging 112 per minute. The patient was promptly and rapidly digitalized without any appreciable effect on the abnormal rhythm. On September 4, 1950, the digitalis was discontinued and quinidine begun. Quinidine was begun cautiously at 3 grains 3 times a day, due to the fact that the patient had just been digitalized. The following day the quinidine was increased to 4 times daily, and on the next day it was increased to 6 times a day. The following morning, September 7, 1950, the patient was found to have a completely regular heart rate. An electrocardiogram was ordered which revealed a normal sinus rhythm and showed no other evidence of cardiac disease. Since a normal rhythm was restored by a low total of 18 grains of quinidine daily, this dosage was continued on a daily schedule. Patient was discharged on September 12, 1950, and was advised to continue his quinidine on this schedule for an indefinite period of time.

COMMENT

This case presented several interesting and unusual features. In the first place, it is unusual to find auricular flutter in the absence of any other demonstrable signs of cardiac disease. Secondly, the ventricular rhythm was irregular, whereas in the usual case, the ventricular rhythm is perfectly regular. This was due to the variable refractoriness in the AV conduction system. Thirdly, the ventricular rate was much slower than is ordinarily seen in a case of auricular flutter. Finally, the abnormal rhythm was abolished with smaller doses of quinidine than is usually successful in such cases. The patient was advised to continue quinidine in this dosage for an indefinite period because it was evident from his history that he had had similar paroxysmal episodes in the past.

DISCUSSION

Dr. B. C. Edwards (Jackson)—There are a few facts I should like to give you from the series of 93 attacks in 82 patients outlined by Drs. Hejtmancik, Hermann and Bradfield on cardiovascular service, University of Texas, School of Medicine.

When flutter lasted up to 72 hours it was classed as short duration, or transient, and when lasting longer it was classed as the established type.

The highest incidence was in the sixth and seventh decades and may more or less correspond to the age arteriosclerotic heart disease, which was the underlying condition in over 25 per cent of the 82 cases. Men predominated in a ratio of 4.7 to 1. The ages ranged from 10 to 89 years.

Among other underlying heart diseases the following appear in order of frequency in the 82 cases.

Acute myocardial infraction	12
Arteriosclerotic and hypertensive	14
Hypertensive	3
Rheumatic	8 or 9.8%
Syphilitic	4
Thyrotoxic	4
Disseminated neoplasia	3
Congenital	1
Constrictive pericarditis	1
No organic heart disease	7

Some of the precipitating factors, other than myocardial infarction, in the 82 cases were:

1. Five cases of digitalis intoxication that reverted to normal rhythm after withdrawal of the drug.
2. Three episodes that occurred when quinidine was used to convert fibrillation to sinus

rhythm reverted to atrial fibrillation when quinidine was withdrawn.

3. There were two cases that occurred after digitalization when digitalis was used in treatment of atrial fibrillation.

4. Trauma and surgical procedures occasionally precipitated the arrythmia.

5. Among other factors precipitating auricular flutter were alcoholic toxicity, diabetic acidosis and epinephrine.

Embolism is said to complicate about 7 per cent of the patients with auricular flutter and is less likely to occur after flutter than after fibrillation. Of the 82 patients with flutter, as mentioned above, one 35-year-old negro man had a cerebral embolus after conversion of flutter to sinus rhythm. A 70-year-old white woman died of thrombosis of the aorta following a saddle embolism at the time of conversion.

Complications occurring after use of quinidine in cases not noted in above series but in other cases are exfoliative dermatitis, sinus thrombosis, thrombocytopenia purpura.

In the March 3, 1951, issue of J.A.M.A., several authors mention the use, intramuscularly, of a 20 per cent solution of quinidine sulfate in propylene glycol, each ampule containing 3 grains in 1cc. They state that use of this does not cause systemic toxicity, or pain, or local reaction.

The use of quinidine lactate, intravenously, in the treatment of auricular flutter, or fibrillation, is very dangerous producing shock and collapse. It causes a sudden increase in ventricular rate because of a decided slowing in the auricular pacemaker and the concomitant increase in auricular ventricular conduction.

BIBLIOGRAPHY

1. Hejtmancik, M. R., Hermann, Geo. R., Bradfield, James Y. Atrial Flutter, Clinical Aspects. Am. Heart. Jr. 40: 1 ,1950.
2. Schaaf, Royal S., Hurst. John W., Williams. Conger. Med. Clinics N.A. 1949.
4. Blinder, Harris; Burnstein, Julius; Horowitz, Wm., Gersh, Eugene; Smelin, Raanan. Studies on the Effects of Parenteral Administration of Quinidine, Arch. Int. Med., Vol. 86, No. 6, Dec. 1950.
5. Taylor, Duane R.; Potashnick, Robt., Quinidine—Induced Exfoliative Dermatitis. J.A.M.A.. Vol. 145, No. 9, Mar 3. 1951.
6. Gluck, Joseph L.; Gold, Harry; Greener, Theo.; Modell, W.; Kwit, N. T.; Thickman, S.; Otto, H. L.; Warshaw, L. J. Quinidine Sulfate in Propylene Glycol by Intramuscular Injection in Man. J.A.M.A., Vol. 145, No. 9. P. 637.

Hirschsprung's Disease (Congenital Megacolon)

J. HARVEY JOHNSTON, JR., M. D.
Jackson, Mississippi

Swenson of Boston has done much in the last four years to clarify the etiology and treatment of congenital megacolon. Although the disease has been recognized as a clinical and pathologic entity for over 100 years, strides in therapy have been made only in the last two decades. The clinical picture is identical with chronic, low-grade intestinal obstruction with obstipation, abdominal cramps associated with visible peristalsis, palpable fecal masses and distention as characteristic features. Until recently the mystifying factor was that the mechanism of obstruction could not be demonstrated, resulting in attention being focused almost exclusively on the markedly dilated and hypertrophied bowel.

Swenson maintains that the fundamental pathology is a *functional or physiologic obstruction in the rectosigmoid* and that the markedly dilated, hypertrophied proximal bowel is purely a secondary manifestation. He supports this concept of etiology with the following established observations:

1. As would be expected in any chronic bowel obstruction, a decompressing colostomy completely relieves the constipation, abdominal cramps and distention so characteristic of Hirschsprung's disease. In fact, the bowel becomes normal in size and appearance in a period of three to six months. Despite the return of the bowel to gross normalcy, closure of the colostomy inevitably leads to a full recurrence of the original disease in several months.

2. Increasing attention has been focused on the possibility of neuromuscular dysfunction of the bowel wall in congenital megacolon. Dalla Valle in 1920 described a case with absence of myenteric plexuses in the colon, an observation which has been repeatedly substantiated. As the picture is typically that of partial colonic obstruction and the only constant abnormality found is absence of the ganglion cells of Auerbach's plexus in the rectosigmoid, Swenson and his coworkers postulate that the

fundamental pathology or underlying cause of the chronic obstruction is a physiologic or functional obstruction of the rectosigmoid. By means of a multiple balloon technique, they have demonstrated that peristalsis in the aganglionic segment of bowel is absent or so disorganized that there are no normal propulsive peristaltic waves in the rectum and rectosigmoid, thus correlating the absence of ganglion cells in this area with the absence of effective peristalsis.

3. By careful barium enema studies they are able to demonstrate a **constant narrow and irregular segment of colon** usually at or near the rectosigmoid in Hirschsprung's disease. In defining this narrowed segment radiologically, it is necessary that a small amount of barium be used, that the patient be examined fluoroscopically and that films be taken in the oblique position. If this is not done, the proximal distended sigmoid will become filled with barium and completely obscure the underlying primary pathology. Fig. 1-A shows the usual routine barium enema in which the dilatation and enlargement of the bowel seems to extend down to the anus. Fig. 1-B shows a repeat barium enema examination of the same patient utilizing a small amount of barium and an oblique view to show the narrowed, irregular segment of bowel, which apparently is the fundamental abnormality in the disease.

4. On the basis that the chronic obstruction and megacolon can be overcome by resecting the segment of neuromuscular imbalance, Swenson has devised a combined abdomino-perineal operative procedure (Fig. 2, 3) whereby it is possible to resect the aganglionic segment of bowel, which usually extends from the rectosigmoid almost to the anal sphincter, and to re-establish intestinal continuity by a "pull-through" anastomosis of the proximal colon to the most distal part of the rectum. Results in his hands have been uniformly good.

Some contend that the excellent result achieved from this ingenious operation is due to straightening out of redundant bowel or overcoming a chronic volvulus. However, there is increasing evidence that the rectosigmoid in true Hirschsprung's disease is devoid of ganglion cells, is incapable of maintaining an effective peristaltic wave and thus acts as a mechanism of chronic obstruction to the entire proximal colon.

Two cases are briefly presented which tend to substantiate Swenson's concept of the eti-

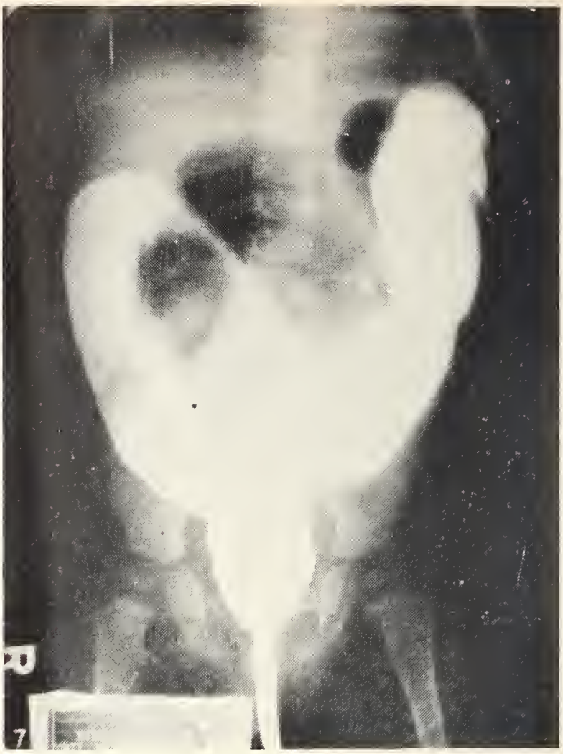


Fig. 1.-A. Barium enema in infant showing marked dilatation and elongation of entire left colon. The dilatation seems to extend down to the anus.

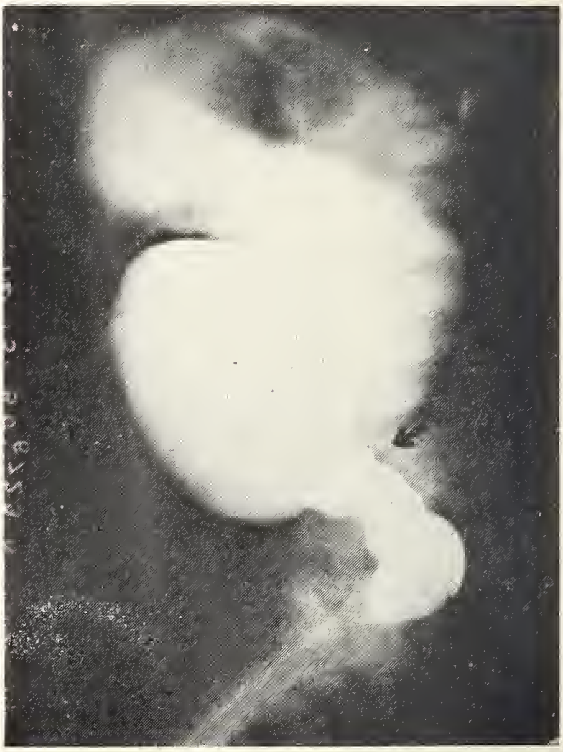


Fig. 1-B. Repeat barium examination in same patient utilizing special technique to show narrowed, irregular segment of bowel in region of rectosigmoid.

ology and rational treatment in congenital megacolon. In both of these cases a narrow, slightly distorted segment of bowel at the rectosigmoid was demonstrated by special radiologic technique. (Fig. 1-B and 5) Histologic study of this segment revealed absence of ganglion cells in both. The period of follow-up is admittedly short, but the results have been so gratifying to the children and their parents that it is hard to refrain from enthusiasm for the procedure.

CASE REPORT—J. R. B., B. H. 50-13768, white male infant 19 months of age presented increasing obstipation and marked abdominal distention. This child had not had a bowel movement without enemata since the first three weeks of life. There had been progression of symptoms in spite of diet, laxatives and mecholyl bromide. The family history is interesting in that an uncle died at the age of nine of a perforated megacolon. The abnormal physical findings were limited to the abdomen, which was markedly distended and presented several large palpable fecal masses on the left side. Rectal examination revealed normal sphincter tone with no feces present in the rectal ampulla.

Six months previously, a barium enema had been done by the usual technique and disclosed a markedly dilated colon which seemed to extend down to the anal sphincter. (Fig. 1-A) Re-examination (using a small amount of barium fluoroscopy and oblique views) showed an irregular area of constriction 20 cms. in length extending from the upper rectum into the lower sigmoid. (Fig. 1-B) The bowel above this area of constriction was greatly dilated and presented residual fecal masses. On the basis of the revised x-ray findings a diagnosis of true congenital megacolon was made and resection of the narrowed, functionless segment of bowel advised. The most important component of the preoperative preparation was cleansing and decreasing the bacterial flora of the dilated bowel with non-residue diet, laxatives, enemata and sulfathaladine.

Operative Procedure: A left paramedian, muscle retracting incision extending from the pubis to 3 cms. above the umbilicus was made. Marked narrowing of the lower sigmoid, rectosigmoid, and upper rectum was encountered. The bowel proximal to this presented marked dilatation and hypertrophy. With the patient in Trendelenburg position, the pelvic peritoneum was incised and the lower sigmoid, rectosigmoid and upper rectum carefully dissected free from surrounding structures. In freeing the rectum, great care was taken to keep the plane of dissection immediately adjacent to the wall of the bowel so that the nerve supply to the bladder would not be damaged. Clamps were placed across the mid-rectum, the bowel divided and the rectal stump closed. The proximal bowel was divided about 5 cms. above the junction of the dilated and non-dilated segments; the upper divided end of the bowel was similarly closed. Immediate frozen section of the upper resected end of the bowel showed that resection had been adequate for ganglion cells were present at the site of resection.

With the aid of an assistant the anal sphincter was gently divulsed and the rectal stump intussuscepted through the anal canal (Fig. 2-A). As a general traction was exerted from below, the upper end of the divided sigmoid, which had been tied to the rectum, was guided into the inverted stump.

After thoroughly cleansing and preparing the perineal field, an incision through the anterior wall of the rectum 2 cms. below the anus was made. (Fig. 2-B) The sutures tied to the lower end of the sigmoid were grasped and by gentle traction the sigmoid was delivered through the rectal opening. A two-layer anastomosis (Fig. 3) was effected approximating the muscular coat of the rectum to the seromuscular coat of the sigmoid with interrupted quilting cotton and the mucosal layers with interrupted triple 0 chromic. As the anastomosis was made, the excess bowel was trimmed away. After completion of the suturing the bowel was easily pushed through the anal sphincter and replaced to its normal position. Pelvic reperitonealization was effected, and the wound closed in layers with quilting cotton.

Convalescence was entirely smooth. The child began to have spontaneous bowel movements on the third postoperative day and has continued to have from one to three normal movements for the past nine months. Six months after surgery barium study showed that the colon had returned to near normal size; 95 per cent of the barium had been expelled when the postevacuation film was taken.

Pathologic report (Dr. F. G. Bratley): *Gross*: The segment of sigmoid and upper rectum measures 20 cms. in length. The lower bowel is of normal diameter, but the bowel above was dilated markedly. Fig. 4) Microscopic: Sections through the dilated segment showed marked hypertrophy of the circular and longitudinal muscle fibers with large numbers of ganglion cells. Multiple sections taken from the narrowed sigmoid, rectosigmoid and upper rectum failed to show any evidence of ganglion cells.

Final diagnosis: Congenital megacolon with absence of myenteric plexus in the lower sigmoid, rectosigmoid and upper rectum

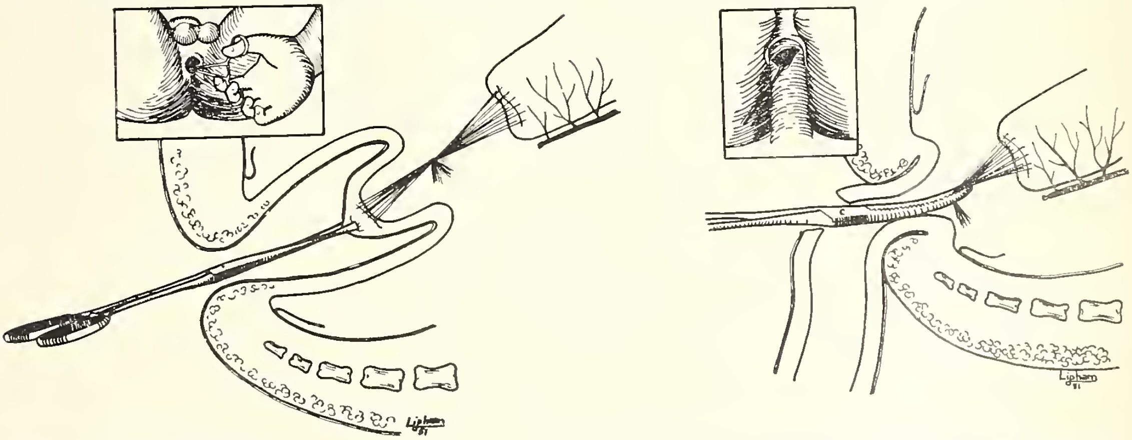


Fig. 2. (After Swenson)
A. Shows intussusception of rectal stump through the anus.
B. Shows opening in lowermost part of everted rectum with clamp introduced into pelvis to guide and deliver the divided proximal bowel into the perineal field.

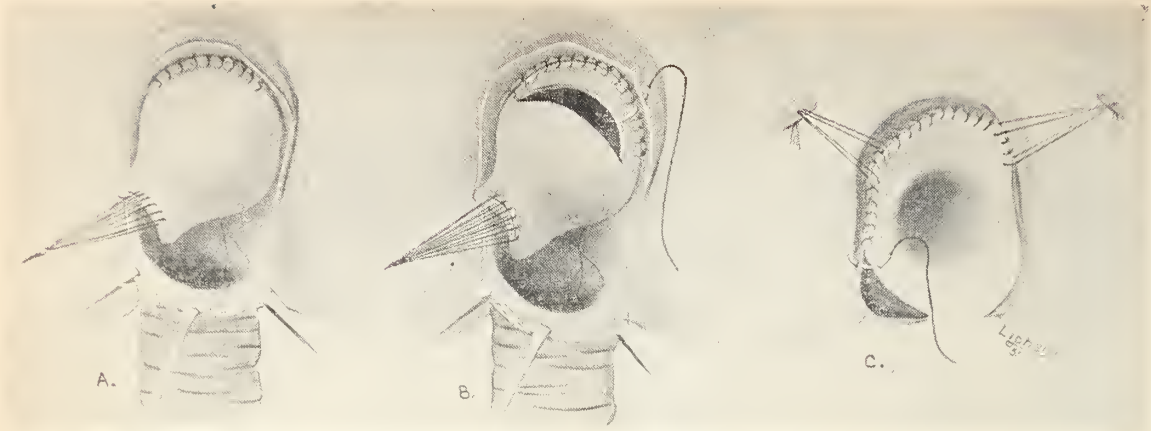


Fig. 3 (After Swenson). Shows detail of two-layer perineal anastomosis. Outer layer of cotton sutures approximates muscular coat of the rectum to that of the sigmoid. Innerlayer of 000 chromic catgut effects snug mucosal apposition.

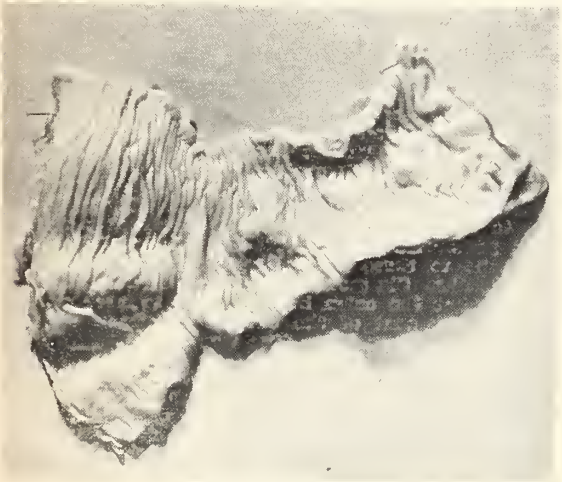


Fig. 4. Shows resected specimen in Case 1 after opening. Note sharp gradation from dilated to normal bowel. Histologic study showed complete absence of ganglion cells in the narrowed segment of bowel.

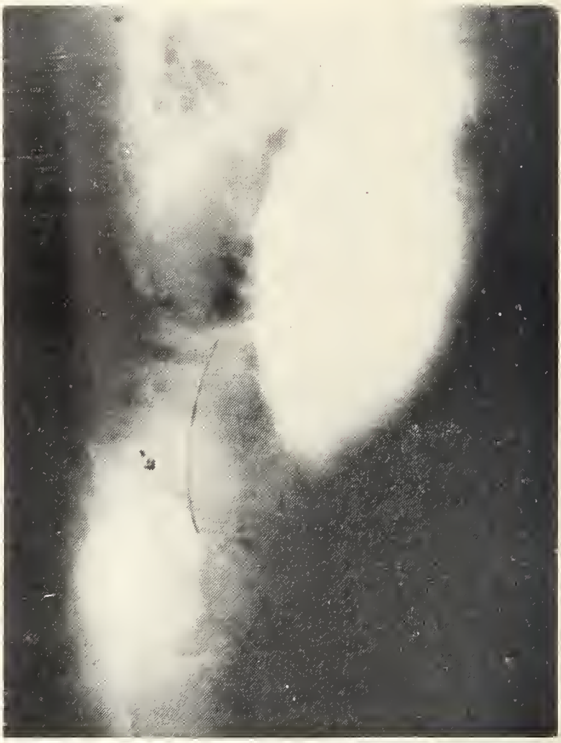


Fig. 5. Barium enema by special technique showing area of marked narrowing at the rectosigmoid. Note the tremendous dilatation of the bowel proximal to this constricted area.

CASE REPORT—J. P., B. H. 51-6722, 9-year-old white male gave a history of intractable constipation since birth with frequent episodes of fecal impaction. On several occasions there had been a three-week interval without a bowel movement. Exploratory laparotomy had been done at the age of 2, but failed to alter the progressive course of the disease. Physical examination showed marked distention of the abdomen with several large palpable fecal masses. Visible peristalsis was seen on numerous occasions. Barium enema (Fig. 5) showed a grossly normal rectum, with a 5 cm. segment of narrowed bowel at the rectosigmoid. Proximal to this sigmoid was tremendously dilated and filled with fecal material. These findings substantiated the diagnosis of true congenital megacolon.

After three weeks of preoperative preparation, featuring low residue diet, sulfathalidine (both for its bacteriostatic and laxative effect), innumerable enemas, laxatives, etc., surgery was done. The sigmoid colon was markedly dilated and hypertrophied, but presented several areas which were quite thin and fibrotic (Fig. 6). The area of narrowing was entirely below the pelvic peritoneum and was not demonstrated until this had been incised and the upper rectum freed by dissection. A Swenson pull-through procedure was effected. Because of the great redundancy of the sigmoid much of it was resected, and intestinal continuity re-established by doing a perineal anastomosis between the descending colon and the lowermost rectum. An indwelling catheter was left in the bladder for five days. Spontaneous voiding occurred with its removal. Convalescence was normal and the child is now averaging two spontaneous bowel movements daily and only infrequently uses laxatives.

Pathologic report (Dr. F. G. Bratley): Careful examination of the lower sigmoid, rectosigmoid and upper two thirds of the rectum showed no evidence of myenteric plexus or ganglion cells.

CONCLUSION: Two cases of congenital megacolon (Hirschsprung's disease) are presented in which dramatic results were obtained

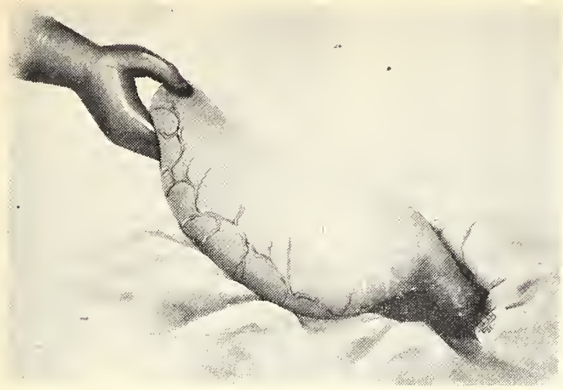


Fig. 6. Artist's diagram of gross findings in Case 2. The marked sigmoid megacolon with an area of fibrosis from prolonged distention is evident. The area of narrowing producing the functional obstruction in this case was entirely below the pelvic peritoneum.

by resection of the area of rectosigmoid and rectum producing functional obstruction to the colon. These cases are presented to emphasize the remarkable rehabilitation possible in true Hirschsprung's disease by the application of Swenson's concept of etiology and treatment to the disease. Surgery early in life is advisable for the disease has a high mortality: in a recent review of 30 cases by Barrington-Ward, it was found that 66 per cent were dead before the age of 3 years.

BIBLIOGRAPHY

1. Swenson, O., Rheinlander, H. F., and Diamond, I. Hirschsprung's Disease: A New Concept of the Etiology, N. E. J. Med. *241:* 551, 1949.
2. Swenson, O., Neuhauser, E. B. D., and Pickett, L. K.: New Concepts on the Etiology, Diagnosis, and Treatment of Congenital Megacolon (Hirschsprung's Disease).
3. Swenson, O.: A New Surgical Treatment for Hirschsprung's Disease. Surgery *28:* 371, 1950.

The Convalescent Care of the Medical Patient[*]

N. C. HOUSE, M.D.

Batesville, Miss.

No doubt, this paper is somewhat off the beaten path of the more usual presentation. Many volumes have been written about the convalescent care of the ill, but it is our purpose to discuss this subject from an angle which we have been guilty many times of neglecting, and probably an angle from which most of us have not been giving enough attention.

The more recent discoveries of the last ten to twelve years in medical and surgical science have in many ways revolutionized the practice of medicine. With the sulfas, the antibiotics, cortisones, and others, we all see patients recover today who years ago would have been hopeless. Most of us remember the typical pneumonia patient of fifteen years ago, when on about the eighth or ninth day, both the family and the doctor gathered in anxiously to await the arrival and the passing of the crisis. That patient who had mustered sufficient resistance to overcome his infection survived; the one who had not was lost. There was not too much to be done by the doctor, other than supportive therapy, actually to bring that patient through his illness. The strong were more likely to live, the weak more likely to pass on. Today, that is no longer true, for the weak also have a good chance for recovery. But how too often do we attend this patient with pneumonia, administer appropriate present-day therapy, guide him through his sickness for three to five days and walk away patting ourselves on the back for a job well done. Actually, our mission has only begun. We have supplied that patient an excellent substitute for sufficient resistance to overcome his infection. This substitute was only temporary and our patient now has not as much resistance as he had when he became ill. It now becomes our job to sit down and say, "Now why was it that Mr. Jones here had pneumonia and Mr. Smith across the street didn't? They both appear to be about the same age, do about the same work, live very much alike, so there must be some reason". In some instances of course, the reason is obvious, overexposure, etc., but many times it is not. It is here that we can be of equally as much help to the patient as we were with his pneumonia. Possibly this patient was anemic at the onset, possibly he had had a bleeding hemorrhoid for years, possibly he had previously had a chronic cough to which he had paid little attention, and possibly he had a chronic sinusitis or bronchiectasis. We recently saw a patient with pneumonia, treated him for about five days, sent him home feeling good, thought we had done a good job, and three weeks later he returns, complaining of some difficulty in swallowing and examination proved he had carcinoma of the esophagus. A more detailed history at that time revealed that he had had slight difficulty in swallowing on two previous occasions to which he had given slight concern and to which he attributed to faulty habits of eating. No doubt, his pneumonia was precipitated by his malignancy.

---

[*] Read at the meeting of the North Mississippi Medical Society, July 5, 1951, Holly Springs, Miss.

The same may be said of the patient who often presents himself with indigestion or other similar complaints when no organic disease is found; a functioning nervous disorder is our impression and the patient sent home with antispasmotic and probably mild doses of barbiturates. Temporary relief is probably obtained, but too often do we fail to sit down and thoroughly go over the history with this patient to determine his cause for anxiety or nervous tension. In haste we tell him to rest, not to work too hard, get more recreation, relax more, etc. But more time is needed to determine accurately the cause for trouble in this individual patient and to help him solve the problems which are causing his trouble. Whether it be pneumonia or any other illness, it behooves us to ask ourselves the question why did he have it and what can be done to prevent a repetition, and what can be done to make this patient as nearly a well and normal man as possible? Too many times does a patient recover from an acute illness only to return to you a month later complaining of inability to regain his strength, his appetite, or a state of well-being when further examination reveals a condition which existed prior to his acute illness. Years ago the weak were often lost, and of course we had no problem but now that convalescence in acute illness does occur in those weak patients, it now becomes a real challenge to assist those patients in becoming as strong as possible, to help them build their own resistance which we had substituted in the form of antibiotics, etc.

It is no longer just a survival of the fittest, but we now very often have the weak left with us, and it is this group of people who we must attempt to help in their convalescence. So often does some chronic condition precipitate an acute illness in those weak patients, and since we now very often see this patient recover from his illness, we must be more careful to make every effort to correct as much as possible the chronic pre-existing debilitating condition. Very often it is no small problem to make this patient realize how important it is for him to go along with you. This is especially true of the patient who is being treated at home and is very reluctant to come to the office for a more thorough examination. Many still can't realize that home examinations and treatment are often merely to get the "ox out of the ditch", and if the patient gets to feeling a little better oftentimes we never see him again.

Another problem facing us today in convalescent care is that of immunity and the child or young patient. How often does mother bring Johnnie into the office with an upper respiratory infection, fever 102°, and almost demanding "the works"—meaning sulfa, penicillin, etc., and, promptly he gets "the works ". In 24 to 72 hours Johnnie is much better, no fever, desiring to play, so mother sends Johnnie to school again where he is exposed to the same environment as when he became ill. Too often we see children recover from an acute illness only to contract again the same illness in a few days possibly from a brother or sister who previously contracted the illness from Johnnie's original sickness.

In present-day medicine with this type patient we must remember that this child has been given very little opportunity to build up his resistance or develop immunity to so many infective organisms. We have fought his battle for him thus far but we must go farther and in the convalescent period make every effort to see that his resistance is built high. Maybe he has had too much protection, a hothouse plant, not enough outdoor exercise or sunshine, improper diet, producing an anemia or vitamin deficiency, or a physical defect such as excessive adenoid tissue causing an obstruction or chronic postnasal drip, or other predisposing physical defects. The convalescent treatment that this child receives usually determines whether he will develop a recurrent similar infection.

It is not our purpose here to tell you how to treat the patient in his convalescent period, but we would remind you to remember to treat him.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton .... Oxford
President
Dr. J. G. Thompson .... Jackson
President-elect
Dr. T. M. Dye .... Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. .... President
Greenville, Miss.
H. T. Smith .... President-elect
McGehee, Ark.
L. T. Carl, M.D. .... Vice-President
Jackson, Miss.
D. T. Owens, M.D. .... Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. .... Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

EDITORIALS

THE PHYSICIAN'S ATTITUDE TOWARD THE PATIENT WITH CANCER PHOBIA

HARWELL WILSON, M.D.*

GUEST EDITORIAL

Today as never before the layman is being kept constantly aware of the dangers of malignant disease. Every means of communication is being used to stress the point. This has undoubtedly been responsible for the cure of many patients with malignant disease. In spite of this intense educational campaign many cancer patients when first seen by a physician are in a late stage of the disease.

This campaign has naturally resulted in a deep seated fear of cancer which disturbs many people who do not have the disease. Almost every physician is consulted by patients with various irrelevant complaints who simply wish to be assured that they do not have cancer. Strangely enough many of these patients are frankly apologetic in seeking a medical examination. Such individuals frankly state that they fear they are wasting the physician's time on an unnecessary and uninteresting task.

The plea of this editorial is that we as good doctors have an obligation to these individuals which should be taken in all seriousness.

The patient must be assured that there is no reason for apology in the least and that the attitude of desiring to find out the truth is the intelligent approach to the problem. Many doctors have shown a tendency at times to be hasty in dealing with a patient who does not obviously appear to have organic disease. Some physicians have shown visible annoyance and at times even open resentment toward the patient who simply requests a routine check up examination without a specific complaint. One may sympathize with the busy physician who is called upon to do a routine examination yet this is important. Disease if present should be found early when the chance of cure is greatest. In many instances it is also possible to dispel serious anxiety which if not allayed might lead to a serious neurosis.

A careful history and physical examination supplemented by indicated laboratory procedures should be carried out in order that the disease, if present, may be unmasked. If the examination is negative, the patient should be reassured. Reassurance given after serious consideration of the problem means much to the patient.

Reassurance given without the benefit of a thorough examination may destroy the confidence of the patient in the doctor and it may even cost the patient his life by failure to find an obvious malignancy. Certainly every doctor's office should be a real cancer detection center. It is also the doctor's obligation to allay the fears of cancer phobia with sympathetic reassurance after the patient has been thoroughly examined.

We should never cause a patient to feel apologetic when asking for a cancer examination.

---

* From the Department of Surgery, University of Tennessee.

G. P. MEETING SUCCESSFUL

The Academy of General Practice arranged a fine program at its annual meeting in Jackson at the Heidelberg Hotel. The president, Dr. John B. Howell, presided, presenting such outstanding men as Drs. Louis Katz, Eric Oldberg, Francis D. Murphy and Armand J. Quick, men unsurpassed in their fields. The meeting was well attended and well ordered in every way. Dr. R. B. Robins, the after dinner speaker, while a master with humorous stories, drinks deep from the fountain of human philosophy, and is up to tomorrow in trends in the field of medicine. He knows well the application of medicine. He understands the public mind. Dr. Robins is an important factor in keeping medicine free and helping to maintain the American way of life.

The meeting was well attended by about a hundred and seventy-five doctors. The spirit and the fellowship in the meeting was superb.

Dr. S. K. Johnson of Pelahatchie was elected president of the Academy with Dr. Gus Rush of Meridian as president-elect. Congratulations to a rapidly growing organization.

HEART ORGANIZATION FORMED

Mississippi now has a definite heart organization. Dr. T. E. Wilson of Jackson was elected president and Dr. John Archer of Greenville, secretary. The organization is in hands, able and dependable. Dr. Felix J. Underwood and his associates aided consistently in the organization of this association. Not only doctors but laymen as well have demonstrated cooperative interest.

Heart disease is the master killer of men. It heads the list. Much can be done to reduce deaths from heart disease, and we think it will be done. We applaud our state is falling in line and ready to do its part.

We are grateful to Dr. Harwell Wilson of Memphis for a guest editorial on a timely subject.

OB-GN FORMS ACADEMY

The National Federation of Obstetrics and Gynecology Society has reconstituted itself as The Academy of Obstetrics and Gynecology. This was of June 13, 1951. At this meeting Dr. Woodard D. Beacham of New Orleans was elected president of this great organization. Application for membership may be had from Secretary Ralph A. Reis, Chicago, Ill.

It is most gratifying to note that a native of Mississippi is president of this fine organization. Dr. W. D. Beacham is of the Beacham family so well known in medical circles in Mississippi. Dr. Woody Beacham has made an outstanding reputation for Tulane and for himself through the years. He is nationally known and well esteemed in his native state and in the South. He stands high in the profession, is scholarly and well trained, courtly and obliging in manner, kind and loyal as a friend. This outstanding honor is well bestowed.

THE SOUTHERN MEDICAL

The Southern Medical Association meets in Dallas, Texas, Nov. 5-8, inclusive. It will be good to be at this meeting. Southern hospitality will be at its best in the Lone Star State at Dallas, a great state and a great city. The bravery displayed at the Alamo still activates the atmosphere in Texas, as does the vision, the courage and the resourcefulness of Sam Houston.

Texas has and does possess political leadership. It is a state of means and power. The medical profession is likewise ahead in leadership, believing in free and democratic medicine. The Texan has a mind as open as its great spaces, honesty and cool thinking guiding his decisions. Dallas is charged with such personalities as Dr. J. A. Majors with the Saunders Book Company, a native of Booneville, Mississippi, big hearted, friendly, cordial and helpful, and Dr. Ed Cary, a native of Alabama and a vital part of this great Southern city for many years. His work with the Blue Cross has done wonders to save free medicine, making him a national figure in medicine and in statesmanship. And then there is the fine spirit activated by the work of President Curtice Rosser that ranks along with Majors and Cary. Many other individuals could be mentioned, but the cordial and friendly handshake of the entire medical profession of Texas is an indispensable part of Southern medicine.

For fine fellowship and scientific medicine, no medical organization surpasses the Southern. It will not only be good to be at the meeting, it is our duty also. Attend the Southern Medical Association in Dallas for inspiration and for information to fit you to better serve your clientele.

The Delta Medical Society put on a fine program October 10. Our esteemed friend, Toxey Hall is the honored president, Dr. John W. Williams the incoming president, with Dr. Howard A. Nelson as secretary. The Adams brothers of Memphis, Drs. Milton and Lorenzo, plastic surgeons, were guest speakers. Dr. Milton Adams will also read a paper on the General Practice Section at the Southern. It will be well worth your hearing.

The Mississippi Division of the American Cancer Society is actively on the job. Mrs. Elizabeth Wates, Dr. Felix Underwood, Dr. A. L. Gray, Dr. Hugh Gamble, and Dr. W. H. Parsons, along with others, are pushing the work in every way. A fine program has been arranged for October 17 at the Heidelberg Hotel in Jackson. Doctors are especially urged to be present on the 17 to hear nationally known Drs. George Grile, Francis Massie, and Fred Homburger. To hear these men is a wonderful opportunity. Let us give them a good hearing.

News and Comment

DR. CURTICE ROSSER

Dr. Curtice Rosser is president of the Southern Medical Association, which holds its forty-fifth annual session in his home town of Dallas, on Nov. 5-8. He is able and outstanding in his chosen specialty of proctology. He has been referred to as dean of his specialty in the great state of Texas. He is known quite as well in the Southern States and throughout the nation. He has been very active in the Southern Medical for many years, having served one term on the council. He is kind-hearted, courteous and obliging, scholarly and dignified. His personality inspires confidence, points to nobler deeds and activates courageous effort.

NAVY APPOINTMENTS

Civilian physicians with no present service affiliation and who did not particpate n the Army Specalized Training Program (ASTP) desiring commissions in the Regular Navy should apply to the Office of Naval Officer Procurement, U. S. Custom House, New Orleans, Louisiana.

It is no longer necessary for the young physician completing his internship to be ordered to appear for written professional examination and to await action thereon before appointment may be effected. Those serving an internship may submit their applications within two months of completion date, but appointments will not be issued until they have satisfactorily completed internship.

The A of GP is a rapidly growing medical organization. It is calculated to raise the batting average of the practitioner and it is already a powerful force for free and democratic medicine.

ANNUAL PRIZE ESSAY CONTEST

The American Dermatological Association is again offering a prize of three hundred dollars for the best essay submitted for original work, not previously published, relative to some fundamental aspect of dermatology or syphilology. Further information regarding this essay contest may be obtained by writing to the secretary of the American Dermatological Association 102-110 Second Avenue, S. W., Rochester, Minn.

The next annual meeting of the American Dermatological Association will be held April 23-26, 1952, at the Broadmoor, Colorado Springs, Colorado.

VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association which will be held in Saint Louis, Missouri, May 1, 2 and 3, 1952, providing essays of sufficient merit are presented in competition.

CHEST DISEASES

The Annual Postgraduate Course In Diseases of the Chest sponsored by the Council on Postgraduate Medical Education and the New York State Chapter of the American College of Chest Physicians, will be presented at the Hotel New Yorker, New York City, November 12-17, 1951.

ACCP

The Interim Session of the American College of Chest Physicians will be held at the Ambassador Hotel, Los Angeles, California, on December 2 and 3, 1951.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

PEDIATRICS

INDIGESTION BY CHILDREN OF VARIOUS SUBSTANCES, INCLUDING POISONS." A. L. King, Oakland, Calif. Permente Found. M. Bull. 8: 20-28, Jan. 1950.

"A listing is made of the substances ingested by children seen in the Permente Hospital Emergency Room, Oakland, California, from 1945 to 1949.

"There was a total of 196 cases of children ingesting poisonous substances. Ant poison containing arsenic was ingested by 37 children. Aspirin accounted for 17 of the ingestions. Other common articles ingested were barbiturates and thyroid tablets, each 6 children; lye, carbon tetrachloride, kerosene, matches and crayons, each ingested by 5 children.

"There were 33 children admitted to the hospital because of ingesting poisons. One died of aspirin poisoning and manifested hyperpnea, acidosis and oliguria. The other child who died had swallowed lye, and, although early dilation of the esophagus was carried out, esophageal strictures, necrotizing esophagitis, esophagoperitoneal fistula and peritonitis developed in about a month.

"Three case reports of poisoning due to less well known poisons are included: Tung nuts (the oil from which is used for making varnish) caused an acute, severe gastroenteritis. Ingestion of privine nose drops (0.1%) led to acute, severe hypertension, 210 mm. systolic and 160 mm. diastolic, and stupor in a 19-months-old white boy. Magnesium sulfate intramuscularly seemed to be effective in reducing the blood pressure. Naphthalene (moth balls) ingestion was followed by severe hemoglobinuria, anemia and gastroenteritis with tarry stools, and the patient was cured by multiple transfusions. Of 93 non-poisonous foreign bodies ingested, 30% were coins and passed through the gastrointestinal tract without difficulty unless held up in the esophagus.

"Probably the most useful bit of knowledge about a poisoned child is to know, preferably in chemical terms, specifically what has been swallowed. Lack of this knowledge sometimes leads to giving dangerous antidotes to children who have swallowed innocuous substances."

COMMENTS: This article calls attention of the medical profession to the many calls we have from frightened mothers in regard to their children ingesting not only such poisons as are mentioned here, but many others, including that of solutions of boric acid. The responsibility of warning people against the indiscriminate placing of many poisons around the household is, of course, that of the physician, but public health workers and all types of social workers should join the doctors in warning people against the dangers of such poisons that are commonly used around the household.

Three cases of non-specific keratitis cleared with cortisone solution and heavy vitamin therapy within 10 days. A similar case seen by me several years ago resulted in dense corneal scars with marked loss of vision. One of the cases of non-specific keratitis had marked folding of endothelium which cleared up in a week's time almost completely.

Two severe corneal ulcers were kept under control while antibiotics and other general measures resulted in a cure, with very little corneal scarring resulting.

Two cases of dendritic ulcer of the cornea were not helped at all. Two cases of retro-bulbar optic neuritis were not helped. Several cases of vitreous opacities have not been helped at all. Thus it is seen that in spite of other reports about the posterior segment of the eye being helped, in my experience, just as in Dr. Rogers', it has not been of much benefit.

* * * * * * * * *

PEDIATRICS

THE TREATMENT OF INGUINAL HERNIA IN INFANTS AND CHILDREN. Willis J. Potts, William L. Riker, and James E. Lewis, Chicago, Ill. Ann. Surg. 132: 566-76, Sept. 1950.

"There is a tendency to make the repair of inguinal hernias in infants and children unnecessarily complicated. In these hernias the pathology is not a weakness of musculature and fascia, but merely the presence of a congenital hernial sac. It is, therefore, necessary only to remove the sac after high ligation of the neck.

"Because of the incidence of incarceration and the inefficacy of a truss in children, operation is performed as soon as the hernia becomes evident if the child is otherwise healthy. A small transverse incision is made in the crease of the groin. A small opening is made in the external oblique fascia. The sac is carefully dissected free from the cord, without disturbing the latter. The sac is then twisted, transfixed, and ligated at its neck with silk, and the redundant portion removed. The external oblique fascia and superficial fascia are reapproximated with a few silk stitches. The skin is closed in infants with 6-0 subcuticular silk sutures to minimize the chances of infection from excreta.

"This procedure has been carried out on 600 patients at the Children's Memorial Hospital. One hundred infants below 18 months of age and 100 children up to 13 years of age have been examined a year or more postoperatively and analyzed for this study. There was only one recurrence in this group. Nineteen per cent of the infants had or had had incarcerations. One of these patients died because of gangrene of the bowel. Six infants with incarceration had gangrene of the testicle. This emphasizes the necessity for early repair of hernias in infants and children."

COMMENT: (Dr. Harvey F. Garrison)—It has been my privilege to see the work done by Dr. Potts and if results count for anything Potts' technique is superb. I felt that the medical profession over the country would be interested in his type of operation.

MISSISSIPPI STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

CHILD GUIDANCE ACTIVITIES

By Estelle A. Magiera, M.D., Director

The Child Guidance Center established in Jackson September 1, 1943 has made a significant contribution to the public health program of the state. Aided by clinics at Greenwood and Hattiesburg and mobile clinics conducted in other areas, a wide segment of the population has benefited from this program. Treatment of emotionally disturbed children, together with guidance of parents, has been one of its primary objectives. A psychiatrist, psychologist, and a psychiatric social worker trained to counsel parents and to help children overcome behavior problems are indispensable to effective child guidance work. The importance of scientific training and teamwork in the effort to prevent mental disease and better life adjustment cannot be overemphasized. Direct services offered to children referred to the Center are of three varieties. The first and most important is the treatment of the disturbed child, where findings seem to warrant such treatment. Second, diagnostic services are given to schools, physicians, and courts. Such services are given for children who are referred specifically for this purpose and who do not represent candidates for psychotherapy. Third, consultation services are offered concerning cases presented by other agencies.

There has been a considerable amount of educational work done in an effort to reach a greater number of people. A typical and timely example of the educational approach is the following radio broadcast done by our psychologist, Miss Dorothy J. Day, copies of which have been mimeographed for general distribution:

Emotional Problems of the Beginning School Child

For the past few weeks you have heard a great deal about the desirable things to do in order to prepare your child for his first school experience. This morning, at the close of his first week of school, I want to talk with you parents a little about some of the changes in his behavior which you may have noticed, and I want to talk a bit, too, about his feelings which are at the bottom of this behavior—and about your own reactions to them.

Do you remember how, a year ago, you thought to yourself, "I'll be glad when it's next year and Johnny or Susie is in school—then **I'm** going to take some time to relax! I'm going to rejoin my afternoon clubs and I'm going to read some of the books I've wanted to read and I'm going to do—oh, just lots of things I've had no time to do in the past few years. I'm going to relegate "Dr. Spock" to the shelf and have a holiday? Well, last Monday — or the Monday before that—you stood in your doorway and waved the youngster off to school, a little bit frightened by the fact that here he is —going off without you—to the beginning of a new experience—and is never going to be quite the same little boy or girl again. That morning you didn't get all the housework done in record time as you'd thought you would—for, although you were determined not to be too concerned, there was a nagging little worry in the back of your head. In the afternoon you were so glad to see him come back home—unharmed and, to all outward appearances, unchanged. And you were so relieved you almost went overboard in greeting him and plying him with questions. The next day it was a little easier to see him off; and, by this time, you have probably rearranged your own chores to fit your routine to this new development.

Now your Johnny or Susie has had some rather strange feelings too. In the first place this beginner in school has now arrived at a time in life when he is leaving the familiar environs of home where he is a natural and comfortable part of a group, where he knows his world and has adjusted to it in line with his own capacities and his parents' ideas about how a child should behave. Upon entrance in school, however, the first grader is setting sail on a big, new, and possibly frightening adventure where further adjustments must be made —for now his world will suddenly grow much larger. At first entering school a child has only the tools with which his first six years of living have provided him to deal with this unknown quantity.

When a child's relation with his parents is warm and easy and happy, he has a good chance of making easy, pleasant contacts outside his home. We must be very careful, however, and look into our own ways if we are going to be certain that each of our children has every chance to fit comfortably into the world in which he is going to live. Is your youngster taking into this new experience the feeling of a place that has been friendly to him since he can remember? Has it been a place where there are opportunities to do interesting things and where the adults have not been too busy to laugh with the children and to really be sincerely interested in their activities? If he hasn't had a free and easy time with adults in his life heretofore, he isn't likely to relate too easily to a strange teacher who appears to want to restrict his activities much as other adults have tried to do all along. And if he hasn't had much give-and-take contact with other children he may be unhappy until he finally becomes a well recognized part of this strange assortment of new faces into which he has come. Has he had the opportunity to attain the outlook that is desirable for a six-year-old to bring with him to the school situation?

Few things interfere with a child's acceptance by the other boys and girls like immaturity. The child who cries or is angered too easily is at a disadvantage with his schoolmates, for they will sense almost at once that this particular child is very unsure of himself. They haven't lived long enough to be interested in looking behind the present behavior to the cause of it. Let's take stock for a moment of the assets and liabilities our school beginner takes to this new situation with him: Emotionally, can he accept a position of following as well as assume on occasion the position of leadership wherein he can exhibit some skill not shared by all the children in his schoolroom? Can he be satisfied for short periods without attention from his teacher such as he has received from his mother? —Almost inevitably he is going to correlate her with you, you know. Can he entertain himself constructively, yet participate as a member of a group if a cooperative enterprise fires the other children's imagination? . . . Can he take care of his physical needs alone, or must he have a great deal of help in doing such things as tying his shoes, buttoning and unbottoning his clothes, or putting on suitable clothing in accordance with weather conditions?

It takes an awful lot of a teacher's time to perform these chores for twenty or thirty or forty children—time which you have a right to expect should be spent in instruction. Your child's teacher is interested in his health and in his habits as well as his emotional and mental development, but she has only the material which you have sent her to work with. How well have you taught your child to do for himself the things which may normally be expected of the six-year-old? Hopefully, school beginners should be able to do most of the things I have mentioned; still it is a recognized fact that few of us develop smoothly and evenly in all these areas; so if Johnny or Susie can't do all these things, it isn't exactly cause for alarm — it is simply a signal to us to understand where he or she may be less proficient and to help him attain these skills.

The adult looks behind the child's present behavior for causes. This is the prerogative and the duty of all people who come frequently in contact with others — especially with children, whether we are parents, teachers, groupleaders, specialists in some field of child evaluation and training, or a combination of these. It is not always easy to locate the exact cause of behavior which may be puzzling or disturbing to us when we see our children exhibiting it, and if our efforts and conversation with our neighbors about it fails to help, we should then talk it over with someone who is trained in locating and helping to remedy these problems as they arise. Your State Board of Health has such specialists who are eager to discuss your questions with you when you feel the need of assistance. Early recognition of behavior difficulties is important. A very wise philosopher once said: "The most complicated problem could have been solved had it been attended to when first it appeared" or words to that effect. We know this is particularly true in the realm of human relationships. The adult who eventually runs afoul the law or who gets into serious emotional difficulties, whether through withdrawing from all contacts, or from belligerently pursuing his own course without consideration for the rights ana wishes of others, inevitably shows a long history of maladjustment. It is not infrequent that from early childhood the people who have surrounded him have not known how to provide the best social relationship for him. Generally their motives are unquestionable — it is the method for dealing with the difficulty that may be at fault without their recognizing it.

If we appear to have more problems in bringing up children now than people seemed to have in grandmother's day, it is partly because we are so much more aware of children's needs and their possibilities and are confused as to how to go about meeting these needs and providing for the expansion and emotional growth of the child. All I am saying is what most of us already know — when we are confronted with a situation in which we are uncertain, we all become anxious; the way to rid ourselves of our anxiety to obtain the best information possible as a guide and then to utilize it in our own situation.

So if Johnny and Susie seem awfully unhappy about school, there is a reason. It may be their vision or hearing is ever so slightly "off" — and good vision and hearing are of utmost importance for achievement in school. It may be that the natural curiosity of the young child has been somewhat stifled. Should that be true, the motivation toward learning may be lacking — for they will be afraid to seek information and growth in this new setting just as they were forbidden to seek it in the world from which they are emerging. It may be that they have just never come into contact with so many children at one time before — and you might be surprised at how many children still are overly sheltered and overprotected!

On the other hand, without boundaries having been set for them in previous situations, many children cannot now accept limitations and they become the show-off or the disturbing influence in the group, a distracting element which must be curbed for the good of everyone concerned. The other children and the teacher will eventually take care of this, but it is a good thing for you to know what is taking place so you can understand why the child behaves as he does. Remember, you're sending Johnny or Susie to school partly to learn how to get along with others. Don't get mad when this shaping and molding process becomes a bit painful for him. If you look behind the pain to the reason you can help Johnny to ease the blow himself until such a time as he is fully capable of doing it alone. Isn't this our major consideration as parents? —to love our children wisely (you can't love them too well but you can love them neurotically and to their detriment) so that they will grow and develop into individuals of whom we are proud and who are socially acceptable from every standpoint? Of course, that's a long way in the future for most of us who are thinking together this morning, but to be reminded that "The longest journey begins with a single step" helps us to recognize the importance of to get the first steps right — then — yes, THEN we will probably rejoin these afternoon clubs and read these books we've been meaning to read for YEARS!

OUR ERROR

It has been called to our attention that three names were omitted from the roster of the 1951 Transactions, due to errors in printing. They are: Dr. K. T. Klein of Meridian, Dr. John C. Suares and Dr. John Archer, both of Greenville.

DEATHS

DR. EDMOND BROOKS YOUNG

On March 10, 1951, the grim reaper knocked at the door of our medical sanctuary and called Dr. Edmond Brooks Young, the son of the late Thomas W. Young and Sallie Blue Young.

Dr. Young was born at Ellzey, Mississippi, March 8, 1883, being sixty-eight years and two days old at the time of his passing.

After he graduated at Vanderbilt University, Nashville, Tennessee, in 1904, he located at Vardaman in Calhoun County where he spent his entire professional life. He believed in and practiced ethical medicine. The medical profession held him high in regard for his ability and his patients loved him as a man and as a physician. His presence exuded good cheer and gave the patient a sense of well being comparable only to the benefits derived from his skill in therapeusis.

Dr. Young was civic minded, always ready to boost anything that was beneficial to his community. He was a member of the Methodist Church, the Masonic Lodge, and the Order of the Eastern Star.

He is survived by his wife, Mrs. Cubell Evans Young, and one brother, R. G. Young of Vardaman, Mississippi.

"He walked through life and left his impress there:
He still lives on in ways we cannot know.
His love of life and living is not lost;
His spirit carries on in those he loved
And reaches out to touch humanity—
A heritage continuing through the years."

Respectfully submitted,
J. RICE WILLIAMS, M. D.,
J. M. HOOD, M. D.,
W. J. AYCOCK, M D.

DR. G. W. ROBERTSON

Magnolia lost one of her most useful and best loved citizens when Dr. G. W. Robertson died August 6. He had been in bad health for the past two years, but his death came as a shock to his family and friends.

Dr. Robertson was 78. He was a native of Pike County, but came to Magnolia in 1899 and began the practice of medicine. He was married in that same year to Miss Lemmelia Lewis, and for 52 years they maintained a hospitable home, instrumental in the promotion of every movement for the good of the community.

He was a loyal member of the Methodist church, having served on the church boards for almost as long as he has lived in Magnolia. It was largely through his initiative and perseverance that the new Methodist church was built in Magnolia.

He is survived by his wife; two daughters, Mrs. John R. Goza and Mrs. Frank M. Lee, both of Magnolia; four grandchildren; seven great-grandchlidren; and one sister, Mrs. Mattie Ainsworth of Crystal Springs.

DR. VINCENT BONELLI

Dr. Vincent Bonelli, Sr., prominent Vicksburg physician, died July 29 following an illness of several days. He was 71.

Dr. Bonelli was graduated from McGill University, Montreal, Canada, in 1906, and obtained his license in Mississippi the same year.

He was a member of the staffs of the Vicksburg Infirmary and the state Charity hospital, and a member of Holy Trinity Episcopal church.

Dr. Bonelli is survived by his wife, two daughters, one son, two brothers and two sisters.

Woman's Auxiliary

OFFICERS

President	Mrs. George W. Owen	Jackson
President-Elect	Mrs. Richard Clark	Hattiesburg
First Vice-President	Mrs. W. H. Anderson	Booneville
Second Vice-President	Mrs. Willard Waldron	Jackson
Third Vice-President	Mrs. I. C. Huggins	Jackson
Recording Secretary	Mrs. C. C. Hightower	Hattiesburg
Treasurer	Mrs. J. D. Simmons	Cleveland
Parliamentarian	Mrs. V. B. Philpot	Holly Springs
Corresponding Secretary	Mrs. P. R. Greaves	Jackson

COMMITTEE CHAIRMEN

Program	Mrs. T. A. Baines	Jackson
Research and Romance of Medicine	Mrs. I. J. Newton	Greenville
Legislation	Mrs. J. G. Thompson	Jackson
Doctor's Day	Mrs. L. J. Clark	Vicksburg
Preventorium	Mrs. Henry Boswell	Sanatorium
Today's Health	Mrs. S. L. Bailey	Kosciusko
Nurse Recruitment	Mrs. S. B. McIlwain	Pascagoula
History and Archives	Mrs. Harvey Garrison, Sr.	Jackson
Revisions	Mrs. J. R. Williams	Houston
Budget	Mrs. Stanley Hill	Corinth
Memorial	Mrs. Joe Rogers	Oxford

NORTHEAST MEDICAL AUXILIARY

Gathering at the spacious home of Mrs. R. T. Dabbs in Aberdeen, the quarterly meeting of the Northeast Mississippi Auxiliary was featured by a review of the life of Dr. W. A. Evans, world-renowned physician and native of Aberdeen, given by Miss Peacock, librarian of the Evans Memorial Library. Her treatment was entertaining, graphic and informative.

Mrs. James Grant Thompson of Jackson was a guest who brought greetings.

A particularly delightful program regaled the group later in the afternoon when Mrs. A. A. Roebuck and Betsy sang, accompanied by Mrs. Marvin Harlow, and young pupils of the local dancing instructor, chiefly children of doctors in Aberdeen, gave a little recital.

Mrs. Dabbs was assisted by other Aberdeen doctors' wives in serving tea.

Vaginitis

B. Bernard Weinstein, M.D., and
David Weinstein, M.D. †
New Orleans, La.

THE RATIONALE of therapy in vaginitis is dependent upon the basic histology and physiology of the vagina. The vaginal wall consists of three layers; an outer fibrous, which is derived from the pelvic fascia; a middle muscular, consisting of an inner circular and the outer longitudinal fibers; and an inner mucous, which consists of stratified squamous epithelium superimposed upon a tunica propria of light textured fibrous tissue and having an irregular wavy basement membrane. Normally, there are no glands in the vagina, other than an occasional aberrant cervical gland or gland-like tubules derived from the wolffian duct.

The mucosa is primarily under the hormone control of the ovaries, estrogens being the prime factor in stimulating proliferation of vaginal epithelium, and thus maintaining a vaginal mucosa of normal thickness. The estrogens are also responsible for the deposition of glycogen. By enzymatic and bacterial action, glycogen is broken down to lactic acid, the presence of which favors the growth of certain acidophilic bacteria (Doderlein lactobacillus). These organisms further increase acidity by utilizing glycogen and carbohydrate (resulting from the enzymatic breakdown of some of the glycogen.) The resulting pH of the vaginal secretion in the normal adult during the period of ovarian function is 4 to 5. Since Doderlein bacilli are practically the only organisms that can live in such an acid medium, they are in almost a pure culture in the vagina. By this mechanism the genital tract is protected from exogenous bacteria. However, there are times of diminished ovarian function, as in infancy and childhood, menopause and the postpartum. The diminished hormone production at these times results in a diminished thickness of the vaginal mucosa, less glycogen deposition, less Doderlein bacilli, and hence an elevated pH. All of these factors result in a lowered resistance to pathogens.

In any study of vaginitis, it is quite clear that a study of the vaginal secretion is necessary, as it demonstrates not only the specific organism involved but also the pathological physiology and hence gives one an index to the type of therapy indicated. The first step in studying any case of vaginitis then should be, obtain the pH with a testing paper, a smear and where possible a culture for identification of the organism.

One might classify **vaginitis** into the following types:

- I. Trichomonas
- II. Yeast
- III. Non-Specific
  - a. B. coli
  - b. Staphylococci
  - c. Streptococci
  - d. Pneumococci
  - e. Trichophyton
  - f. Amoebic
  - g. Jusvepinillosis
  - h. G.C.
  - i. Vag. Emphaseomatosco
  - k. Plaut-Vincent's
- IV. Endocrine or Physiologic
  - a. Postpartum
  - b. Postmenopausal or trophic
  - c. Hyperhormonal leukorrhea or vaginitis
  - d. Infant
    - 1. Specific (G.C.)
    - 2. Non-Specific
      - a. Foreign bodies
- V. Allergic and Traumatic
  - a. Drugs (contraceptives)
  - b. Clothing (silk, celanese, nylons, etc.)
  - c. Masturbation, scabies, pediculosis.

Since Donne in 1837 first described the pathogen, Trichomonas has come to be recognized as the most common type of vaginal infection in the post pubertal female. Although a number of different species of Trichomonas occur in man, all quite similar in morphology, trichomonas vaginalis is the only one which thrives in the vagina and is associated with the characteristic symptoms ascribed to the condition. It differs from other trichomonas also in that there is no cyst stage. The others, Trichomonas (mouth form), Trichomonas hominis (intestinal form), can live only in their peculiar designated environment. Each can, however, be grown in a corresponding locale in the female monkey.

It is estimated that trichomonas is more prevalent in temperate zones, the reported incidence ranging from 10 to 24 per cent of all women. The infection is found much more frequently among clinic patients, more, especially, in those women with bowel disturbances, and with a perineum shortened by birth injury. Although mode of transmission is still obscure, since it is more frequent in this group, instruction as to proper cleansing of the perineum is essential. It may be transmitted by contact (toilet seats, toilet articles, water contamination, etc.) Men are occasionally found to be carriers, with prostatic or urethral (5 to 25 per cent) infections, hence there is a venereal possibility. It is unlikely that oral or G.I. tract organisms are the source of the vaginitis.

---

† From the Department of Gynecology and Obstetrics, School of Medicine, Tulane University of Louisiana, New Orleans, La. Delivered before the resident staff of the Obstetrical and Gynecological Service, Touro Infirmary, New Orleans, La.

Diagnosis is based upon symptomatology and clinical findings. The most common symptom is an irritating leucorrhea with a disagreeable odor, frequently accompanied by pruritis, especially at onset, also vaginospasm, dyspareunia and a sensation of heaviness. In acute stages there is frequently dysuria — due to irritation of external urethra or to burning of chafed skin. On examination, one finds a foamy greenish discharge present with or without an associated vulvitis. The vaginal mucosa may be inflamed with punctate hemorrhagic spots. The portio vaginalis of the cervix is frequently similarly inflamed (strawberry lesions).

A cervical erosion may or may not be present. If present, it is usually eccentrically placed away from the os on the portio. The vault will contain discharge which is a light yellowish-green with air bubbles. The cervical canal is not affected, although Skene's glands may frequently be. A wet smear of the discharge quite readily reveals the trichomonas organism in constant motion and easily differentiates the pathogen from the gonococcus which it may simulate even to having an associated diplostreptococcus which frequently is misinterpreted as G.C. If the patient douches before an examination one may miss the diagnosis if strong lubricants are used, as they may damage the organism, or if saline is not used on the slide, or if too hypertonic a solution is used, or if the smear is allowed to dry before reading.

Many treatments have been advocated. All reports seem to agree that relief is easily obtainable, but permanent cures are much more difficult to arrive at. The organism is easily killed by drying agents and many antiseptics but they escape by being buried in folds of mucosa of the vagina and vulva, in the cervical canal, Skene's gland, Bartholin's gland and the bladder, thus causing frequent recurrences.

Among the agents suggested are sulfathiazole jelly, sodium parborate, negatan (Lilly), merpectogel, Lassar's paste, drying powders (Kaolin), carbarsone, acetarsone, silver picrate, argyrol, etc. etc. The wide variety of agents suggests no single cure. After use of many of these and others, we have resorted to a routine of cleansing the vagina with dry cotton balls, painting the vagina with 2 per cent aqueous gentian violet solution and recommending acid douches and inserts of florequin (diodoquin). Only in the failures from this method do we resort to any or all of the other suggested procedures and then only after checking the male for bladder or prostatic infection as a source of reinfection of the female, and checking the patient's own bladder and Skene's glands as a source of reinfection. It is important that the florequin inserts be continued during the menstrual flow although the douches are discontinued at this time. After apparent cure is obtained, the patient is advised to continue therapy at menstruation and for a few days thereafter for at least four menses.

Where trichomonas and yeast infections coexist an effort is made to control the yeast infection first.

Yeast is the second most common type of vaginitis. Before 1931, it was uncommonly diagnosed. However, following the report of Ploss and Hesseltine, and Borts on large series of cases, attention was directed to its frequency.

Almost all fungi fall into a large group known as yeast or yeast-like.

The crytococci or simple yeast-like fungi, occur in the vagina as yeast cells. Reproduction on corn meal agar, Carnot's plugs or Saboureaud's medium is by budding — or the formation of more yeast cells. Mycelia or ascospores are not produced under any conditions. At present, there is no conclusive evidence of the pathogenicity of cryptococcus isolated from the vagina or vulva. True cryptococcosis in subacute or chronic infection of the lungs, skin, brain, etc., is due to an encapsulated species known as Cryptococcus neoformans. The common vaginal cryptococci do not form capsules.

The Saccharomycetes (true yeast) occur in the vagina and when cultured on Saboureaud's agar usually produce only budding forms. Culture on carrot plugs produce the sex phase or ascospores. These are important because they must be differentiated from species of candida.

The genus candida reproduce by formation of yeast cells and the production of mycelia. Both forms are frequently seen in the direct examination of the vaginal discharge. The presence of mycelia by direct examination of the vaginal discharge is presumptive evidence that the fungus belongs to the genus candida. Finding of only yeast cells does not rule out candida — or suggest either Saccharomyces or cryptococci. Cultivation on Saboureaud's agar produces yeast cells — and a stage not easily differentiated from other yeast or yeast-like fungi. In poured plates of commercial agar mycelial production occurs in 24-48 hours. There are about 67 species of candida of which three (C. albicans, C. stellatoida, and C. tropicolia) raise symptoms.

Diagnosis is based upon symptomatology and clinical findings. The main complaint is severe itching and leucorrhea often associated with swelling of the labia and dermatitis of the surrounding skin, frequently dysuria and external burning. Vaginal examination is frequently painful, as is coitus. The discharge is thick, cheesy and flaky white (thrush patches) and it is found on the labia, clitoris, vagina and cervix. The vaginal mucosa may be hyperemic and edematous. A high carbohydrate content and increased vaginal acidity favor the growth of the organism (hence increased in pregnancy and diabetes). In pregnancy it may be transmitted to the baby in passage through the birth canal. It is difficult to cure, especially in pregnancy where the hyphae of the fungi grow well into the epithelial layers. Discharge should be collected, examined and cultured. A fresh saline suspension reveals the pathogen. In contrast to trichomonas, and non-specific vaginitis, these patients usually feel some relief during menstruation (probably because of the alkalinity of the menstrual flow). The intradermal skin test is of little value.

Here again one finds reports of many different forms of therapy. The most popular is the routine cleansing of vagina with soap and water; dry and paint with aqueous gentian violet 2 per cent. There are many modifications of this. A great problem is to watch for overtreatment because of the sensitivity of the vagina and vulva to strong chemicals. The recent addition of propion jel (Wyeth) to the above routine and the use of alkaline (soda) douches has given good results in our hands. More recent experiments with pentavalent ammonia compounds, and some boric acid compounds, indicate a possible cure for some of the more persistent cases. During pregnancy aqueous gentian violet (2 to 5 per cent) 2 times weekly for an indefinite period and the use of propion jel. If sensitivity to gentian violet develops, use vaginal suppositories (10 grs. sodium borate) nightly. Active therapy should be discontinued the last two weeks of pregnancy and resumed if necessary after the sixth postpartal week.

The term non-specific vaginitis refers to those cases due to pathogens other than trichomonas, yeast and G.C., however, in a broader sense we might include those cases wherein the basic pathology does not seem to be due to bacterial invasion but rather to a physiological pathology primarily — (infant, senile vaginitis, etc.) followed by a secondary infection of staphylococcus, streptococcus, etc., when the vaginal resistance is abnormally lowered.

In ovarian dysfunction associated with estrogen deficiencies — the glycogen concentration becomes low, acidity becomes low, Doderlien B. are gradually replaced by a variety of organisms and results in altered characteristics of vaginal secretion and usually a low grade vaginitis. Unnecessary douching may cause replacement of Doderlein B. by less favorable organisms which continue even after acidity returns to normal and cause an inflammatory reaction. The use of pessaries, diaphragms and other mechanical causes of trauma may cause irritation and infection. Cervical infections predispose of vaginitis by persistent alkaline discharges. Therapy consists of, first, an attempt to correct the basic underlying cause such as the ovarian dysfunction (atrophic vaginitis, etc.)or discontinuing the use of chemicals or mechanical agents, following the use of which vaginitis develops. The use of the sulfa drug creams or penicillin locally is of great value in these cases. More recently furacin cream and suppositories have given excellent results.

Non-specific Vaginitis (Colon B.) The patient is usually infected from the use of contaminated water (from douche bag) or by direct contamination from rectum. Here the vaginal discharge is yellowish, thin, very irritating to the labia and has a disagreeable odor. Patient complains of pruritis, burning, and exquisite tenderness on examination. Diagnosis is by smear and culture. Treatment is sulfathiazole, furacin suppositories, penicillin, or in more resistant cases, streptomycin or other antibiotics. It may be necessary to use cauterization of the cervix when erosions are present and application of measures which favor return of the normal vaginal flora (acid douche, lactic acid suppositories, etc.) as well as the use of antibiotics, and the aforementioned drugs to combat infection. Staphylococcal, streptococcal, and G.C. (pubertal) vaginitis might be discussed together. Here the leucorrhea ranges from being thin to watery (usual type) to thick and tenacious. It is irritating. In the acute cases, the vagina is red and edematous, the vulva is frequently inflamed and swollen. The source of infection is frequently obscure except for G.C., however, it frequently is due to contamination from douching, lubricants, or other forms of self-instrumentation or coitus. Diagnosis is from smear, both wet and stained,. and culture. Therapy is with the use of sulfonamides or penicillin (especially in G.C.) or both. Furacin has yielded good results in the staph. and strep. types of vaginitis.

Amoebic vaginitis is a fairly rare lesion. It was first reported by De Rivas and subsequently by Weinstein and Weed. The patient usually complains of a serosanguinous to bloody discharge which has a mushy odor — and without pruritis. Examination reveals a peculiar ulcerated lesion of the vagina and frequently of the cervix (70 per cent). The cervical lesion, when present, is usually eccentrically placed away from the external os. The lesion is relatively granular, shallow and has a purulent area which is friable. Here also the uterus is often enlarged, soft, engorged and tender (possibly uterine involvement). The cervix is usually engorged, soft, tender and enlarged. The lesions bleed easily and persistently. It is frequently confused with granulomatous lesions. A wet smear readily reveals the trophozoite form of Amoeba histolytica. This is usually associated with intestinal amebiasis. Therapy is both systematic and by local insufflation of the vagina — with amoebicidal agents (vioform powder, etc.) and douches (chiniofon 5 per cent or milibis). Therapy for intestinal tract amoebiasis (emetine, diodoquin, milibis, etc.) should always be given.

Pneumococcus may also cause vaginitis (200 or so cases reported). Here the mode of infection is in dispute. Secondarily as a metastatic infection by the blood or lymph channels from some active focus elsewhere in the body—or primary, i.e.; pathogen inserted directly to vagina, probably from using saliva as a lubricant. Symptoms and diagnosis similar to staph. or strep. infections — but somewhat milder. Therapy is sulfa or penicillin.

Another rare infection is fuso-sporillosis (Plaut-Vincent's infection) of the vagina which may also have its pathogenatry in the use of saliva as a lubricant or abnormal sex practices — or auto-inoculation from mouth of women with Vincent's of the gums. This type of infection is favored by uncleanliness and is frequently superimposed on other ulcerated lesions, especially those of a granulomatous character. The discharge is profuse, yellow and foul. Examination reveals the vaginal mucosa and introitus to be inflamed "raw-beef" appearance, frequently associated with deep ulcerations. Similar infections may be produced by other types of spirilla or spirochetes. Treatment consists in first improved hygienic measures for improved cleanliness and then treatment of the infection. Vaginal insufflation with an arsenical drying powder or applications of neoarsphenamine 10 percent in glycerine or gentian violet B.I.D. will give good results. Sulfonamide jellies and creams are less effective, as are some of the recent antibiotics.

Trichophyton (athlete's foot) (true fungus) occasionally is a cause of vaginitis. The source is usually from the feet of the patient. Smear readily reveals the pathogen. Itching is usually intense and continuous and usually worse during the menstrual flow. At first the itching is confined to the vagina and vulva and one finds red blotchy areas on the labia. Treatment consists of 1 to 3 per cent gentian violet applications two or three times weekly, also, clear feet, etc. etc. of the infection. The use of propionic acid derivatives recently has been useful.

Vaginitis emphysematosa is a rare lesion (12 cases reported) first described in 1847. The characteristic lesion is one of gas filled cystoid cavities of the mucosa and submucosa of the vagina and cervix (or both). Giant cells partially line many of the cystoid cavities. Opinion is that the gas is endogenous as opposed to an assumption that the gas is air. The lesion is probably a pathologic entity but is without great clinical significance as the condition is productive of only mild symptoms. It is seen more often during pregnancy than otherwise.

Infant vaginitis, postpartum vaginitis, hyperhormonal vaginitis (leucorrhea) and atrophic or senile vaginitis might next be considered.

Infant vaginitis. In the infant the vagina has an alkaline pH (ranging between 7 and 7.5). The epithelium is thin (containing 6 to 12 cell layers thick) and uncornified — with a low glycogen content and few Doderlein bacilli — all of which render the infant vagina an excellent medium for gonorrheal infections, and contrasts with the squamous epithelium of the cervix, which is immune to gonorrheal infection in the infant. Extension of this squamous epithelium into the endocervix to some extent, and the rudimentary character of the glandular structure of the endocervix also contribute to its immunity from gonorrheal infection. In addition to the above, the vulva of the infant is situated more anteriorly; and the protection from the padding of the adult labia is lacking and the vaginal orifice is much less recessed and lacking the protection of the pubic hairs — all of which render the infant vagina more susceptible to trauma and local irritation from tight clothing and infection.

Introduction of foreign bodies leading to chronic vaginitis with foul discharge is not uncommon and frequently leads to errors in diagnosis because of lack of suspicion or inadequate examination. A clear mucous discharge is occasionally noted which responds to simple hygienic measures — or occasionally when associated with mild hypothyroidism responds to thyroid medication. Monilia and Trichomonas are rarely seen. The majority of cases in children are due to foreign body, non-specific infection (staph., strep., colon B., pneumococcus and occasionally diphtheria) and gonorrheal infection. When intestinal organisms (pinworms, etc.) occasionally cause vaginitis direct therapy first at intestinal pathology and then measures to clear vaginitis.

Therapy for foreign bodies consists of the removal of the object and measures to clear up secondary infection (warm boric acid irrigations, penicillin, etc.). Non-specific infections respond well to hygiene, topical application of mild silver solutions or sulfonamides and occasionally nightly estrogenic suppositories or penicillin. For gonococcal infections, it is necessary to isolate the patient to prevent contamination of others. Care is taken to prevent spread to the eyes, and treatment with estrogens, penicillin or sulfa drugs is quite successful. Authorities differ as to choice of therapy; however, all report good results. We feel that a patient should not be considered cured until after therapy, cultures taken at weekly intervals for a month, then monthly for three months until are all negative.

Postpartum vaginitis is a non-specific infection due to trauma of delivery together with the alkaline secretions from cervix and uterus and the associated glycogen-poor vaginal mucosa. Therapy is acid douches and—or jellies or creams for four to six weeks. Stilbestrol vaginal jelly may be used and does not interfere with lactation.

Hyperhormonal vaginitis (leucorrhea) is a condition of adolescent girls and young married women when there is an excessive amount of vaginal secretion. The discharge is due to excessive stimulation of the lower genital tract by estrogens. A similar discharge is seen during pregnancy. Therapy consists of reassurance and occasional saline douches. In the unpregnant state where discharge is troublesome, methyl testosterone in 5 mgm. daily doses may be given for 10 days, or thyroid therapy will occasionally be of value.

Senile — or atrophic — vaginitis is a condition due to marked ovarian deficiency. The vaginal mucosa is a thin, paper-like structure only a few cell layers thick. The susceptibility to trauma, the lowered acidity, and deficiency of Doderlein bacilli are conducive to the introduction and growth of pathogenic organisms with subsequent infection, implantation and ulceration. Therapy consists in supplying estrogenic hormone to cause proliferation of the vaginal mucosa and correction of the vaginal pH. It is important to break any vaginal adhesions and combat non-specific infections which are frequently associated. Estrogens can be given orally or as vaginal suppositories. Suppositories may be of natural or synthetic estrogens. A water-dispersible acid containing jelly is of value. Acid douches to help restore the normal pH are useful. This therapy will cause a cornification of the vaginal mucosa without systemic effects from the estrogens. Occasionally furacon, sulfa, penicillin or florequin suppositories may be used in conjunction with the estrogens to combat persistent secondary infections.

Miscellaneous vaginitides: Under this heading, I will include all vaginitides which result from 1) sensitivity, 2) allergies, 3) trauma from pessaries, masturbation, etc.

Drug Sensitivities. There are a number of drugs and contraceptive medications which may cause sensitization of the patient and result in a vaginitis which is characterized by a tender, reddened, swollen, edematous vulva and vagina. Therapy consists in discontinuing the offending drug, which is responsible for the vaginitis and prescribing such local measures as needed to augment local healing.

Allergic Vaginitides. There are a number of articles of clothing such as silk, nylon, celanese, etc., and soap, powders, etc. which when placed in contact with the skin of the vulva result in a so-called allergic vaginitis, which is similar to that which results from sensitization to drugs. Here the therapy consists in discontinuing the use of the offending agent.

Traumatic Vaginitides. These result from trauma from the use of pessaries, diaphragms, instrumentation, or masturbation and many other forms of traumatic irritation. Here therapy consists in hygiene measures to cleanse the vagina, discontinuance of the traumatic agent and soothing douches and local medication as needed.

Pediculosis or scabies may cause an irritation about the vulva and vagina and result in a low-grade non-specific vaginitis, due to hypersensitivity to the organism or from irritation from scratching. Here therapy consists in eradication of the pediculosis or scabies and supportive measures to the vagina or vaginal lesions .

In conclusion, one must stress the wide variety of causes of vaginitis, and the necessity of determining the offending organism or agent before attempting to institute therapy.

The Diagnosis and Management of the Patient with a Lump in the Neck*

† R. R. Braund, M.D., W. D. Dunavant, M.D., and Peggy Hickey, M.R.L.
Memphis, Tenn.

THE PATIENT who presents himself with an unexplained lump in the neck frequently taxes the astuteness of the examining physician. During the past five years we have seen in the John Gaston Hospital and the West Tennessee Cancer Clinic 377 patients whose chief complaint or presenting evidence of disease was a mass in the neck. We wish to present a review of these patients as problems in differential diagnoses.

No patient whose diagnosis was evident on physical examination, such as a large thyroid gland, advanced tuberculosis, abscess, generalized lymphadenopathy or known primary cancer, is included in this study. The histological diagnosis of the nature of the mass in the neck was obtained in each instance. The tumors were of epithelial origin in 252 patients; the remainder (125) were leukemia, lymphomatous, inflammatory, or mesothelial in origin.

Analysis of Cases

These 377 patients presented 23 distinct clinical entities. Since the tissue of origin was the same in many instances we have grouped them under seven headings. (Table 1.)

Table 1. Analysis of the origin of 377 cervical tumors:

Thyroid gland	105
Salivary gland	97
Leukemia	53
Metastatic cancer	42
Lymphoma	39
Inflammatory	27
Miscellaneous	14

Tumors of Lymphoid Origin — This group includes lymphosarcoma, Hodgkin's disease, giant follicular lymphoma and leukemia.

We usually think of leukemia as a blood dyscrasia. We must not lose sight of the fact that one of its manifestations is lymph node enlargement. This may be, and is, in many instances generalized. There are, however, some patients in whom only one group of nodes is enlarged and that enlargement may be limited to the cervical nodes.

---

*Presented before the Section on Surgery at the eighty-third annual meeting of the Mississippi State Medical Association, Biloxi, Miss., May 1951.

† Division of Surgery, University of Tennessee School of Medicine and West Tennessee Cancer Clinic

Leukemia was the most frequent single cause of an unexplained lump in the neck. During this five-year period there were 53 patients in whom the initial symptom was cervical lymph node enlargement. In 21 there was no other lymphadenopathy. In some instances the initial blood picture was not diagnostic. The diagnosis was substantiated by biopsy or the subsequent clinical course of the patient. Bone marrow studies were of help in establishing the diagnosis.

There were 20 patients with Hodgkin's disease localized to the nodes of the neck, 18 with lymphosarcomas and 1 giant follicular lymphoma. Solitary lymph node enlargement due to the lymphomatous diseases may be a most difficult diagnostic problem. Even after histological study of the removed mass an exact diagnosis can not always be made. In some patients we found the clinical course of the disease or the response to a therapeutic trial of roentgen therapy of assistance in confirming the clinical diagnosis. However, we should like to point out that we never use a therapeutic test with x-rays until all other methods of establishing the diagnosis have failed.

Tumors of Epithelial Origin — Tumors of thyroid gland origin comprise the largest series of epithelial tumors. There were 105 patients in this group. In 81 patients the lesion was benign; in 24 it was cancer. Table 2 shows the types of pathology.

Table 2. 105 tumors of thyroid origin.

Adenoma (benign)	31
Nodular thyroid (single)	32
Cancer	24
Thyroglossal cysts	14
Simple cysts	4

Nodular Thyroid — a single nodule in the thyroid gland was the cause of the lump in the neck in 32 patients. No case of multiple nodular goiter is included. The preoperative diagnosis in this group was usually adenoma. When associated with some central degeneration they resemble cysts. All were benign.

Adenomas — Adenomas of the thyroid were seen in thirty-one patients. These were discrete nodules in the region of the thyroid gland but in no instance could the tumor mass be definitely associated with the thyroid until the time of surgery. Nineteen of the thirty-one adenomas were in or near the midline.

Thyroglossal Duct Cysts — A thyroglossal duct cyst was found to be the cause of the lump in the neck in 14 patients. Usually these cysts present themselves in or near the midline. When not in the midline they may resemble a simple cyst of the thyroid gland or be confused with a branchiogenic cyst. Unless fluid can be demonstrated a thyroglossal duct cyst may be confused with an adenoma since thyroid adenomas frequently occur in or near the midline.

Cancer of the Thyroid — There were 24 patients with cancer of the thyroid. In some of these the disease had been evident as cervical lymph node metastases for many months. Microscopic study of a lymph node revealed the presence of metastatic thyroid cancer. Frequently the primary tumor in the thyroid gland could not be palpated until the gland was exposed at surgery. This fact may lead to the erroneous diagnosis of "aberrant thyroid", a condition we do not believe exists.

Metastatic Cancer — That cervical lymph nodes are frequently involved by metastatic cancer is common knowledge. These metastatic lesions may be quite bulky and yet the primary lesion remain asymptomatic. We had 42 patients in whom neck metastasis was the only detectable evidence of their disease at the time of admission. In 12 patients the site of the primary tumor was never demonstrated.

Table 3. Location of the primary tumor in 42 patients with cervical node metastases.

Pharynx	7	Esophagus	2
Tonsil	6	Mouth	1
Larynx	6	Pancreas	1
Tongue	4	Undetermined	12
Breast	3		

Since metastatic cervical cancer frequently results from an ulcerated lesion in the mouth or pharynx secondary infection usually accompanies it. This produces tenderness and leads to the diagnosis of infection. If antibiotics are given, usually a few injections of penicillin, relief of tenderness and a decrease in the size of the mass occurs. This temporary response is short lived. Nevertheless, valuable time has been lost. We can not condemn too strongly this indiscriminate use of the antibiotics.

Salivary Gland Tumors — Primary tumors of the parotid and submaxillary gland are not uncommon. Their slow growth and lack of symptoms may give the patient and the physician a false sense of security. Of 121 tumors of salivary gland origin which we have seen, 97 occurred below the level of the external auditory canal. Twenty-one were malignant and seventy-six were benign. Fifty per cent of those arising in the submaxillary gland proved to be cancer while only one in nine arising in the parotid was malignant.

The size of the tumor, its rate of growth and duration are of no assistance in evaluating the histological picture. Some fixation was usually present when the tumor was cancer, a point in diagnosis which we believe to be significant.

Inflammatory Lymphadenopathy Diseases—Cervical lymph node enlargement is frequently associated with infection, especially those diseases of the upper respiratory tract. Only patients in whom the adenopathy could not readily be explained are included in this study. All patients with pharyngitis and acute infectious diseases were excluded. After this exclusion we had 27 patients in whom a biopsy of a node was necessary. In 10 the node enlargement was found to be due to tuberculosis; 17 were classified as non-specific chronic inflammation.

Miscellaneous Tumors — Benign tumors of neurogenic, lipoid or fibrous origin are occasionally found in the neck. Other tumors are the result of congenital malformation such as the branchiogenic cysts. Subcutaneous hemangiomata and lymphangiomata are found in the cervical region of children. Table 4 shows the groups of tumors found. All were histologically benign.

Table 4. Miscellaneous cervical tumors:

Neurofibroma	2
Branchiogenic	7
Carotid body tumors	1
Lymphangioma	4
Hemangioma	2
Total	14

In most patients a careful history and physical examination will reveal the nature of the tumor in the neck. From this study of 377 patients whose diagnoses could not be made after a history and physical examination including routine laboratory studies, we have derived some information, information that may be of assistance in making a diagnosis in future cases.

Regardless of age or sex the mass was neoplastic in 93 per cent of patients; 7 per cent was tuberculosis and—or non-specific inflammatory disease. If the tumor was neoplastic it was malignant in approximately 52 per cent of cases. If one excludes those tumors arising in the region of the thyroid gland the percentage of malignant tumors rises to 57 per cent.

From the above figures one must conclude that an unexplained mass in the neck is a new growth and there is better than a 50 per cent chance that it is cancer. With this assumption one can set out to prove the diagnosis and avoid a delay which will jeopardize the recovery of the patient.

If the tumor is growing rapidly, soft but not fluctuant and associated with slight tenderness and fever, Hodgkin's disease is a likely possibility. If the mass is fluctuant but tense and located near the cornu of the hyoid bone one might think of a branchiogenic cyst. This is still more likely if the patient is a young adult. Aspiration of the mass will confirm the diagnosis.

When the individual is 40 years of age or older the unexplained mass is usually cancer. A diligent search for a primary tumor in the mouth and pharynx must be made. We have examined some patients repeatedly before detecting the primary lesion. This is especially true in tumors of the nasopharynx and base of the tongue.

After evaluating the history, the character of the mass, the blood studies, x-rays and having made a thorough search for a primary tumor, if the diagnosis is still in doubt we consider obtaining a biopsy. The biopsy should be the final test in most instances and should never be considered lightly. If there is a possibility of the tumor arising in one of the salivary glands it should never be biopsied but removed intact. After obtaining histological proof of the character of the cervical mass definitive therapy can be planned and executed with confidence.

Fibrocystic Disease of the Pancreas

ROBERT B. IRELAND, M.D.
Clinton, Mississippi

Fibrocystic disease of the pancreas or cystic fibrosis of the pancreas is a highly fatal systemic disease of infants and small children. The condition is more prevalent than is generally recognized, and is characterized clinically by the association of a chronic upper respiratory infection with diarrhea and malnutrition, and pathologically by obstruction of the ducts of the pancreatic glands, salivary glands, the glands of the trachea and bronchi and secondary fibrotic changes surrounding these structures.

The description of the clinical and pathological picture of this condition and the development of diagnostic tests for its recognition has been principally an accomplishment of the last ten to fifteen years. Probably the first description in the literature was given by Garrod and Huntley who reported a case of chronic respiratory disease associated with fat intolerance and diarrhea in 1913. Passini described the characteristic pathology in the pancreas of an infant dying at nine months of bronchopneumonia accompanied by abnormal stools. This was in 1919. Until 1938 reports of experience with the condition appeared sporadically under various synonyms such as "atrophy of the pancreas, congenital pancreatic steatorrhea, celiac disease, congenital cystic fibromatosis of the pancreas, agenesis of the exocrine portion of the pancreas, and congenital familial steatorrhea." In 1938 Dorothy Anderson of New York published her definitive work reporting 49 cases proved at autopsy. Since 1938, as a result of the work of many investigators but especially of the work of Anderson in this country, a considerable amount of information has been accumulated in regard to the disease. The clinical features have been well described and several diagnostic tests have been devised that have increased the frequency of recognition of the disease during life. Penicillin and the other antibiotics have increased the survival time of these patients so that studies could be made of the effects of various therapeutic measures.

The incidence of fibrocystic disease of the pancreas is low, however, more recent studies are reporting a higher incidence. Dorothy Anderson reported the incidence as 1.7 per 1000 deaths in infants and children for New York. The sexes are equally affected. The oldest surviving case is probably one of Dorothy Anderson's which was 16½ years old when last reported. There is investigative work in progress considering the probability that some fibrocystics may be mild enough to survive into adulthood. This may be found to be the background for many of the chronic respiratory conditions of adults.

Fibrocystic disease of the pancreas is a condition in which early diagnosis and treatment are essential for the long survival of the patient. More widespread dissemination of information concerning this condition seems warranted. The condition is primarily a problem for the pediatrician, but many cases will undoubtedly be seen by general practitioners and others. It may be true, as one writer has stated, that many poorly explained deaths in infants from malnutrition, pneumonia, and diarrhea should be attributed to fibrocystic disease.

The cause of fibrocystic disease is unknown. In many cases it appears to be familial appearing several times in siblings. It is believed to be inherited as a simple recessive mendelian trait, both parents carrying the gene but neither showing the disease. The frequency of the gene in the general population is between 2 and 18 per 1000 according to recent calculations.

There are two hypotheses on which the present attitudes of treatment rest. Both agree that there is an as yet unknown hereditary defect in secretion in the exocrine portion of the pancreas. This defect may be congenital atresia or stenosis of the ducts, but this has not been clearly demonstrated. The early onset favors congenital origin but reports of several identical twins one with and one free from the disease, and its rare association with other congenital defects are against this origin.

According to one theory it is postulated that the defect in pancreatic secretion is part of a widespread defect in secretion affecting the bronchial glands, salivary glands and, in fact, all the secretory glands of the body, some to a greater or lesser extent. The mucous becomes

---

*Paper read before the Central Medical Society, May 1, 1951, in Jackson, Mississippi.

thick and inspissated in the acini of the exocrine portion of the pancreas and this and the secondary fibrotic changes block the smaller and eventually the larger ducts. The result is that the enzymes of the pancreas do not reach the intestine and this results in poor digestion, poor absorption of food and large bulky stools. The abnormal secretion which may be thick and abundant in the bronchial glands may become manifest simultaneously or before or after the onset of the intestinal signs. This abnormal secretion in the bronchial glands favors the development of chronic bronchitis with bronchiectasis, patchy atelectasis, emphysema and broncho-pneumonia. These respiratory conditions are inevitable according to this theory. The abnormal mucous. by blocking the ducts of the bronchial glands, creates tiny pockets in which bacteria may be protected. These protected pockets form foci from which infection may flare up anew even after adequate treatment and apparent cure.

The other hypothesis is that the lack of unknown substance essential for the normal pancreatic secretion and the consequent deficient digestion leads to a deficiency of some function of the bronchial and other glands. If this substance can be supplied by diet then it should be possible to overcome the respiratory disease. At one time this substance was thought to be vitamin A because these patients absorb this vitamin poorly, but the present belief is that vitamin A deficiency is a frequent complication. If vitamin A were the deficient substance then massive doses would be expected to reverse the bronchial pathology, this has not been the case.

The clinical picture and symptomatology of fibrocystic disease as seen by the physician vary somewhat with the age of the patient. The newborns with this condition frequently die of meconium ileus. Anderson believes this group represents 10 per cent of all cases. Meconium ileus is frequently considered as a separate entity. When considered as a separate entity the term meconium ileus is reserved for severe cases which are invariably fatal, more frequently showing demonstrable congenital defects of a structural nature and usually not showing changes in the respiratory tract except those incident to death. Of course some cases are found which show graduations between meconium ileus and cystic fibrosis of the pancreas and so many authorities prefer to consider them an early and later manifestation of the same syndrome.

The larger group of these patients is children brought to the physician during the first six months of life because of feeding problems, hunger, failure to gain in spite of adequate diet, foul stools or chronic spasmodic cough frequently diagnosed as pertussis. This group represents 60 per cent of the cases according to Anderson. One out of every four or five of these children has siblings who died as a baby of diarrhea, pneumonia or malnutrition, and a careful history will often reveal that the parents also had brothers or sisters who died in infancy with similar disorders. Typically these children have voracious appetites but at the same time fail to gain weight.

The third group constituting 30 per cent of the cases usually present as cases of intolerance to carbohydrates and fats, the so-called celiac-like cases. They fail to gain weight and height and occasionally present as cases of dwarfism, with bronchitis or bronchiectasis, and large foul stools.

The physical examination reveals children with malnutrition, often the fat pads of the cheeks are the only remaining skin fat, which gives the child a typical expression. The abdomen protrudes and the liver is often palpable. The chest is usually emphysematous and fine and course rales are present usually throughout both lung fields. Increased respiratory rate and respiratory distress usually come only a few days before death. More rarely signs of vitamin A deficiency such as keratomalacia or vitamin D and calcium deficiency manifested by osteoporosis, may be observed. Definitive diagnosis before death at present rests on the finding of absent or grossly reduced pancreatic enzymes in material from duodenal drainage.

As an illustration of the clinical picture of cystic fibrosis of the pancreas, the following case report is presented. The patient was seen terminally and no specific therapy could be instituted.

CASE REPORT

The patient was a ten-month-old white female. The family history revealed that a brother had died at five months of pneumonia, and two sisters had died, one at twenty-two months of pneumonia and one at birth of unknown cause. There were also two brothers living.

The child was born at term and was apparently well but did not gain weight normally during the first months of life. At three months the patient began to have colic-like symptoms and frequent large stools. The formula was changed several times without effect. At about three months, also, it developed a cough which was diagnosed as pertussis. It continued to have periods of fever and frequent large stools. The baby's weight at 8 months was 13 lbs. At this age it was hospitalized and given penicillin for pneumonia with improvement; however, the cough persisted. Two weeks following discharge from the hospital the child again developed fever and anorexia, this last for the first time. One week later the child was hospitalized for six days and given penicillin with some improvement. Two days before the final admission the patient began to run a high fever and developed deep and rapid respirations and appeared to be in a critical condition.

Physical examination at the time of admission revealed a poorly developed white female semi-comatose child of ten months with grunting respirations. The chest was emphysematous and there were scattered moist rales throughout both lung fields. The temperature was 105.8 degrees rectally. The impression was that the child had broncho-pneumonia and from the history that it mght be a case of cystic fibrosis of the pancreas.

The course in the hospital was downhill and the child expired on the third day. She received general supportive treatment including small blood transfusions and continuous intravenous fluids without improvement. The pathological findings on autopsy indicated that the diagnosis of cystic fibrosis of the pancreas was correct.

The pathological picture as described by Sidney Farber of Boston, who reported 87 autopsies on cases of fibrocystic disease of the pancreas is very widespread. He found thick inspissated mucous in the acini of the exocrine portion of the pancreas with increased fibrosis and complete blocking of the small and medium-sized ducts. He also found inspissation of secretion and dilatation of a similar character in the glands of the trachea, bronchi, esophagus, duodenum, gall-bladder and intestinal tract. The inspissation of bile was perhaps sufficient to cause intra-hepatic biliary obstruction. In addition other pathologists have reported fatty infiltration of the liver. Squamous cell metaplasia is frequently found in the bronchi and the lungs may show areas of bronchitis with abscess formation, atelectasis, broncho-pneumonia and emphysema. The pathology in the lungs is usually the cause of death although heart failure due to cor pulmonale has been reported as the cause of death in some cases of relative long standing.

It has been possible to diagnose this condition in life in the last few years due to an increasing awareness of the disease and to the development of diagnostic tests as aids in ruling the condition out or definitely showing its presence in suspicious cases. The stools may be tested with sudan red for excess fat, and the absence of trypsin may be strongly suspected if the stool does not liquify the gelatin in a piece of unexposed unfixed gelatin film after a period of incubation with diluted stool specimen. These are simple procedures and are frequently used to decide which cases to subject to duodenal drainage, which is a somewhat strenuous procedure for sick infants. Duodenal drainage is done with a double lumen tube so that the stomach juice can be withdrawn and not allowed to neutralize the duodenal juices. The tube can be positioned by fluoroscopy. The juice is then analysed for trypsin. A very low value for trypsin is considered pathognomic of fibrocystic disease. Another test which may be useful is the vitamin A absorption test. In this test the child is given o.1cc. of oleum percomorphum for each pound of weight and the vitamin A content of the blood tested. A value of less than 30 units by one technique is very suggestive of fibrocystic disease. Several writers have described characteristic x-ray findings. One roentgenologist was able to make the diagnosis correctly in six of eight cases. Usually the x-rays are only contributory evidence. The stools are not characteristic and analysis of their contents is usually only suggestive. They may vary as to color, odor, and consistency even in the same individual. A therapeutic test using 0.3 gm. to 5 gm. of pancreatic granules with each feeding has been helpful. If improvement results from this medication, the case must be further investigated.

The treatment of fibrocystic disease has been directed toward correcting its respiratory and intestinal manifestations. The respiratory condition is remarkable in that the mucus is very thick and abundant, cultures most frequently show pure staphylococcus aureus. Most often the infection is mild as to toxic symptoms except in the terminal phase. The respiratory infections have been treated by the usual methods of treating chronic bronchitis, bronchiectasis and asthmatic conditions. Aspiration, postural drainage and vaccines have been used where indicated. The use of penicillin in the form of an aerosol with or without adrenalin has been particularly helpful in controlling the respiratory infections. The newer antibiotics have been reported to be even more effective.

The treatment of the intestinal derangement has been first an attempt to substitute for the absent enzymes by the use of pancreatic extracts. The use of enteric coated pancreatin granules has been shown to produce improvement. In addition a diet which contains 20 per cent to 40 per cent more than the required calories is recommended. Low fat seems indicated since the absorption of the fat soluble vitamins A and D is reduced in high fat diets, and also since these patients show fat intolerance. The diet should be high in protein and slightly restricted in carbohydrate. These may have to be varied in different cases as some seem to have better digestion for one than for the other, due probably to the state of efficiency of the remaining enzymes of the digestive tract. Recently it has been possible to feed these patients protein hydrolysate preparations with very good results in maintaining nutrition. Vitamins A and D are given in large amounts—parenterally in severe cases. Vitamin B_1 liver extract and choline are given in the hope of decreasing or preventing fatty infiltration of the liver. In general treatment has been encouraging. Most investigations show definitely better results in the treated cases and survival has been very much prolonged by treatment. It is to be expected that as earlier diagnoses are made, treatment will show better results.

In summary I have attempted to call attention to a comparatively new disease of infants and small children and to describe briefly its clinical features, pathology, and the present day treatment.

BIBLIOGRAPHY

1. Dorothy H. Anderson M.D. "Fibrocystic Disease of the Pancreas Report of 49 Cases", Amer. J. Dis. Child., Vol. 56:344-399, Aug. '38.
2. Dorothy H. Anderson M.D. Therapy and Prognosis of Fibrocystic Disease of Pancreas" Pediatrics, Vol. 3:406-417, April '49.
3. W. A. Daniel, Jr., M.D. 'Fibrocystic Disease of the Pancreas" J.M.A. Alabama, Vol. 14:138-141, Dec. '44.
4. Lowell S. Goin M.D. 'Fibrocystic Disease of the Pancreas" Radiology Vol. 51:36-41, July '48.
5. Dorothy H. Anderson M.D. and Mariluise V. Early A.B. "Method of Assaying Trypsin Suitable for Routine Use in Diagnosis of Congenital Pancreatic Deficiency" Amer. J. Dis. Child. Vol. 63: 891-893, May '42.
6. Dorothy H. Anderson M.D. Pancreatic Enzymes in the Duodenal Juice in the Celiac Syndrome" Amer. J. Dis. Child., Vol. 63:643-648, April '42.
7. David G. Pugh M.D. "Fibrocystic Disease of the Pancreas" Amer. J. Med. Science, Vol. 210:681-687, Nov. '45.
8. C. V. Lowe M.D., C. D. May M.D., and S. C. Reed Phd. 'Fibrosis of the pancreas in Infants and Children" Amer. J. Dis. Child., Vol. 78:349-374, Sept. '49.
9. W. A. Daniel Jr. M.D. 'Fibrocystic Disease of the Pancreas, Report of Eight Cases" Amer. J. Dis. Child., Vol. 64:33-42, July '42.
10. Richard E. Wolf M.D. and Ralph Johansmann M.D. "Report of a Case of Cystic Fibrosis of the Pancreas" Ohio State Med. J., Vol. 40:844-846, Sept. '44.
11. T. B. Merner M.D., J. F. Bosma M.D. and A. J. Moss M.D. "Fibrocystic Disease of the Pancreas" Minn. Med., Vol. 29:429-436, May '46.
12. Gordon E. Gibb M.D. "Fibrocystic Disease of the Pancreas" Calif. Med. J., Vol. 69:341-344, Nov. '48.
13. H. F. Phillips, Jr. M.D., G. Lawrence B.S., and K. C. Lewis M.D. 'The Diagnosis of Fibrocystic Disease of the Pancreas" Jour. of Ped., Vol. 25:284-298, Oct. '44.

Limitations and Errors in Histopathologic Diagnoses*

WILLIAM V. HARE, M. D.
Professor of Pathology
University of Mississippi

OUTLINE: LIMITATIONS AND ERRORS IN HISTOPATHOLOGIC DIAGNOSES

- I. Surgical Errors and Limiting Factors
  - A. Cautery biopsy
  - B. Mashing of tissues
  - C. Wrong site biopsy
  - D. Opening specimen in surgery
  - E. Overinterpretation of biopsy
- II. Handling Errors
  - A. Name, number, or tissue mix-up
  - B. Improper fixation
- III. Terminology Errors
  - A. Basic terminology
  - B. Carcinoma in situ
  - C. Histogenetic interpretation of sarcomas
  - D. Precancerous lesions
- IV. Limitations of Quick Frozen Sections
- V. Lesions Which Must Be Interpreted Rather Than Diagnosed

---

*Presented at the eighty-third annual session of the Mississippi State Medical Association, Biloxi, Mississippi, May 15-17, 1951.

A. Benign metastasizing adenomas of thyroid
B. Cellular myomas
C. Hydatid mole and choriocarcinoma
D. Skin and dermal appendage tumors
E. Borderline lymphomas
F. Papillomas
G. Gastric and intestinal polyps
H. Small kidney tumors
I. Carcinomas which have invaded adjacent organs of similar histology
J. Variations in different areas of same tumor
K. Bilateral tumors
L. Bacteriologic lesions

Many of us spend a good deal of time extolling the virtues of our own special branch of medicine. The internist tries to convince the unwilling listener that his is a more glorious specialty than that of the orthopedist and vice versa. Occasionally even the pathologist and surgeon feign importance. Today, however, I wish to do the opposite, namely, play down the reliability of histopathologic diagnoses. This seeming incongruity on my part has been instigated by the somewhat gullible acceptance by practitioners of histopathologic diagnoses as finite solutions to their diagnostic problems.

This attitude is accentuated by the surgeon who sends in tissue with little or no history, thus implying that tissue "readings" to a pathologist are as simple as meter readings to a public utilities service man. While this may be taken as subtle flattery for the omniscient pathologist, it is hardly good medicine.

Our poor results may be roughly divided into actual errors and simple limitations of methodology.

I. Surgical Errors and Limiting Factors. Since this is a surgical group, let us first hastily peruse the actions of the surgeon himself that lead to ultimate fallibility of histopathologic diagnoses.

First, the cautery biopsy. As therapy for chronic cervicitis, and possible even small cancers, it is excellent. It was never meant, however, for a diagnostic procedure. It is a natural afterthought on the part of the surgeon that, as long as he has this nice chunk of tissue out, he might as well send it to the pathologist to see what he can make of it. Actually, I believe most of us in pathology would rather see tissue that had gone through a meat grinder. Here (Plate 1), is a section of normal cervix removed by cold steel, or biopsy forceps; on Plates 2 and 3 we see a biopsy removed with the cautery. Note the extreme distortion of the epithelial cells and nuclei, the broad band of coagulated subepithelial connective tissues, and the complete absence of epithelium on the surface. I know a pathologist who, quite conscientiously, refuses to read cautery biopsies since he says any answer he gives from such tissue is intellectually dishonest and likely to mislead the clinician. I believe his view is too narrow, but certainly if the case is considered a diagnostic prob-

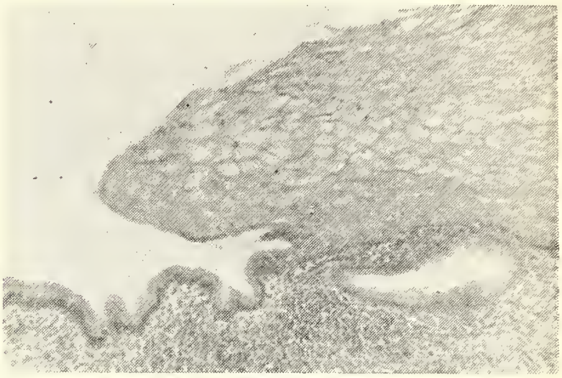


Plate 1

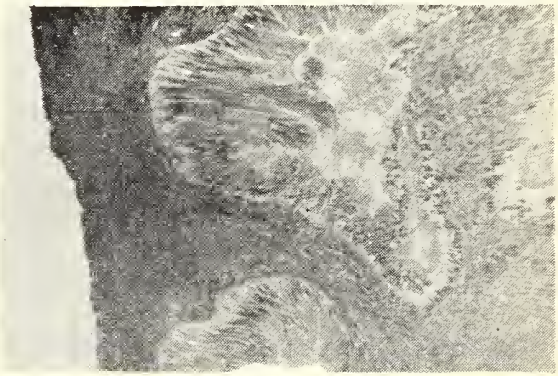


Plate 2

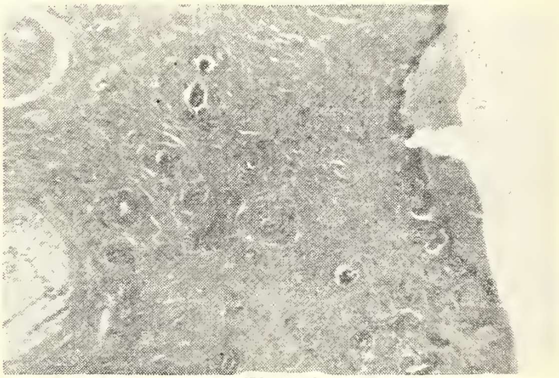


Plate 3

lem, it would be well to take a cold biopsy before cooking the remainder of the cervix. Small carcinomas may be easily missed in cautery biopsies.

Second, the crushed biopsy. These are taken from the cervix when (1) the clinician is using his "old favorite" (1922 vintage) biopsy forceps and (2) he has a nurse strong enough to hold the patient on the table. They are taken, however, in a similar manner elsewhere. One favorite organ for the surgeon to mangle is the helpless lymph node. Being encapsulated and slippery, it apparently vexes the impatient operator, and the Gordian knot is ruthlessly cut by grasping the node with an oversized toothed clamp. The node is bested and the pathologist tested. Here is a tissue (Plate 4) showing the effect of crushing. Note the extreme distortion of architecture, and along the clamp line itself both nuclei and cytoplasm show elongation, rupture, and fragmentation. On a biopsy this large, such features may be ignored; occasionally however, a critical area may be destroyed.

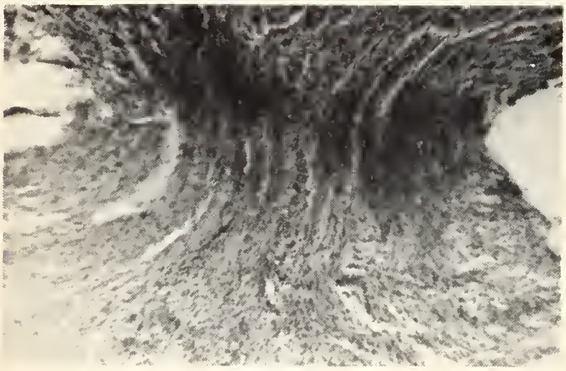


Plate 4

Third, we have the biopsy which is taken from the wrong site. This ordinarily does not reflect on the ability of the surgeon but is a chance occurrence due particularly to the fact that many tumors, for instance, are infected, and inflammatory tissue may be biopsied rather than the adjacent tumor. When breast carcinomas occur in conjunction with chronic mastitis, it is quite easy to biopsy an area of mastitis. Inguinal lymph nodes are quite commonly biopsied in suspected diseases of the lymphoid system because they are so accessible. As a matter of fact, they are usually the least desirable from a diagnostic standpoint since in almost any adult they show chronic lymphadenitis, and their enlargement may be quite unrelated to the disease under study. There is no certain way to avoid such errors of site of biopsies, but a constant awareness of this possibility will help select the proper site, as well as remind one of the necessity of taking a second biopsy when the pathologist's report does not seem to fit the clinical findings.

Fourth, a brief word about the opening of specimens in surgery. There's something about surgeons that makes them naturally eager—it must be the same drive that makes them able to stand up for such long hours, something the chair incubating pathologist has a hard time understanding. What seems only a little cut for peeking, or slight dissection for clarification in surgery, sometimes makes for extreme difficulty in orientation for the pathologist. The cutting up of a specimen so that it will go into a small jar for mailing would hardly seem worth mentioning except that it still happens occasionally.

The fifth error in which a surgeon may play a major part is something I have listed as "over-interpretation" of the biopsy report. This error occurs most frequently when two organs are involved to be the basis, no matter how elaborate an interpretation may be necessary, for both symptoms or organs. I have seen a case of carcinoma of the breast declared to be inoperable because the supraclavicular and axillary lymph nodes were enlarged and an axillary node biopsy reported positive for malignancy; since the critical nodes in this case are the supraclaviculars, these should be biopsied rather than the axillaries, even if the technical problems are more difficult. A large percentage of enlarged lymph nodes in association with malignancies are found to be enlarged due to chronic inflammation only!

II. Errors in Handling of Specimen. These we may cover briefly since they are obvious enough if their existence is merely considered. In every laboratory with which I have been associated, there have been occasional mix-ups in names or numbers accompanying the specimens. Sometimes they occur in the laboratory and sometimes they have taken place before the specimen reached there. One factor which makes these mistakes more likely to occur is the careless listing of tissues sent to the laboratory.

---

1. Ackermann, Lauren V. and Del Regato, Juan A., *Cancer, Diagnosis, Treatment, and Prognosis,* C. V. Mosby Company, 1947, pp. 951-953.

Fixation, ordinarily a minor problem, has several small facets which should be mentioned. One is that formalin tends to become acid on standing; tissues fixed in acid formalin sometimes produce a large amount of "formol pigment" in the tissues which may render a diagnosis difficult or impossible. A few pieces of calcium carbonate gravel or dust placed in your stock formalin will keep it neutral indefinitely. A second error, usually not so damaging to the tissues, is in the mathematical confusion regarding strengths of formalin. Formalin, by definition, is a 40 per cent aqueous solution of formaldehyde; therefore, 10 per cent formalin, the proper strength fixative, is only 4 per cent formaldehyde. Tissues fixed in "straight" formalin bring tears to the eyes of the examiner, brittleness to the tissues, and added expense to the submitting clinic.

From a technical point of view, formalin is by no means the best fixative. Its two basic advantages over other fixatives are (1) it's easy to use, and (2) it's cheap. For a given case, if an unusually nice section is desired, ask your pathologist what fixative he would recommend in that particular instance. Formalin is a particularly poor fixative for many brain tumors, and many special strains indicated for finite diagnosis may not be satisfactorily carried out on formalin fixed tissue.

III. Terminology Errors. This third group of errors is due to imperfect liaison between pathologist and surgeon. In Mississsippi we see two factors enhancing the number of errors in this category. One is the fact that we have had no four-year medical school. Therefore, all Mississippi practitioners have taken the major portion of their clinical training outside of the state. While there are certain favorite schools for the Mississippians, the fact remains that Mississippi doctors have received training from widely spread areas of the country. Each medical school, and even each professor, utilizes a few variations from basic terminology that are personal and different from prevailing use. Sometimes these differences are deliberate, on the basis of some special work or field of interest at the particular institution involved, and sometimes they are merely casual choices of equally acceptable words or diagnoses. Even the dictionaries don't agree on such sticklers as lymphopathia venerum,, lymphogranuloma inguinale, granuloma inguinale, lymphogranuloma venereum, granuloma venereum, etc.

A second factor enhancing this form of error in Mississippi is the paucity of pathologists in the state with the result that many of you do not have a pathologist in your own community and must send specimens by mail to the laboratory. The pathologist and surgeon can learn a great deal from each other by frequent conversations. A quick local call to clear up a confusing point in the history, add supplementary information, or discuss significance of diagnoses, is something that we miss when not in close contact with our colleagues.

The term "Carcinoma in Situ" s one which has led to much confusion and to some sad clinical mistakes. The basic concept of the term is simple; namely, that this is a cluster of cells which are still in their proper and original place in the tissue, but which is abnormal enough for a diagnosis of malignancy to be made. If we accept the cellular nature of cancer, all cancers must at some early date pass through this "in situ" phase. Or, another almost as simple way of looking at it is that cells do not become cancerous after they invade—they invade because they are cancerous. Despite this simple theoretical concept, there are many clinical pitfalls in its use. One is in the pathologist's diagnosis itself. This is one lesion which will cause a great deal of honest difference of opinion amongst the pathologists. One and the same lesion may be called "metaplasia", "precancerous", and "carcinoma in situ" by three different pathologists. By the time a lesion becomes advanced enough to be called "carcinoma in situ" by a conservative, there will usually be another calling it "invasive carcinoma". Another disturbing feature about them is their erratic clinical courses. Some become invasive in a few months, some after many years. Occasionally one is seen, after being left untreated, which will go as long as ten years and more with no clinical evidence of disease. This leaves us with the supposition that some small cancers undergo spontaneous cures, or that biopsy sufficiently upsets the local tissue metabolism to eradicate a small cancer, both somewhat disturbing hypotheses. There has been a remarkable increase in such biopsies in the last few years with the recognition by clinicians that these cancers do not give symptoms and that they may not be identified with the naked eye. With the added impetus of the cytologic smear technique, there is little doubt that the numbers of carcinomas in situ that we see will continue to climb.

The terminology of sarcomas is always a source of confusion. Perhaps the old German writers had the right idea when they divided sarcomas into round cell, spindle cell, and giant cell sarcomas. That didn't tell the clinician where the tumor came from, or what it could be expected to do, but sometimes our strictly modern, assumed histogenetic diagnoses don't mean much more. The terms applied to various sarcomas are not synonymous in different standard textbooks. A sarcoma is one histologic type may act in an entirely different manner in one organ and another. Certain histologic types of bone sarcomas are not nearly so malignant as others; particularly in the thyroid and skin, tumors that were formerly considered sarcomas, we now recognize as spindle and giant cell carcinomas.

The term precancerous is always good for an argument. Does precancerous mean that an area, if left alone, will progress through frank malignancy and ultimately cause death by invasion or metastasis? If so, such a lesion should probably be called carcinoma in situ, since those are the prognostic signs inferred by any diagnosis of cancer. Does precancerous mean merely that the tissue involved is more likely to become cancerous than some other area? If so, the epithelium of the normal cervix may be said to be precancerous since it is more likely to become malignant than a similar area on the skin or vulva. To some men squamous metaplasia of the cervix and chronic mastitis are themselves considered precancerous—if they are however, they are far less so than certain other "precancerous" lesions. What the term boils down to, then, is a statement of relativity; unless the surgeon knows the exact implications of his particular pathologist's term in a given case, a discussion is indicated.

IV. Quick Frozen Sections. Since Bloodgood's dissertations on the dangers of biopsy, the quick frozen section has attained enormous popularity. With the breast tumors particularly, it serves a very useful function. Some surgeons however, have not appreciated the strain on the pathologist's time and diagnostic acumen which it entails. It is most enlightening for surgeons to look at frozen sections themselves occasionally to see the quality of the tissue preparation on which the microscopist must make his diagnosis. Some turn out fairly well, some are extremely poor, the percentage of each depending on the skill of the pathologist and the nature of the tissue. Usually a diagnosis may be made on the section produced; occasionally the pathologist may have to defer a diagnosis until a permanent section is made. The third, and most unfortunate alternative, is the occasional error which will be made on such sections that is corrected on the permanent section. No matter how good or how bad a pathologist may be, he will make more mistakes on quick frozen than on permanent sections.

V. Lesions Which Must Be Interpreted Rather Than Diagnosed. This brings us to an interesting group of lesions which routinely stump the pathologist who attempts to give out simple and precise diagnoses. "Benign metastasizing adenoma of the thyroid" is an example of confusion of terminology due to attempts to give a simple name to a complicated phenomenon. Some tumors of the thyroid are quite cellular but encapsulated and not showing cytologic irregularities. We call them adenomas, and then sooner or later one of them shows up in the spinal column, skull, or lungs, and it takes more than a pathologist to say it's not carcinoma. Sometimes even these metastases look benign. There seems to be equally little point in calling the thyroid tumor a carcinoma since far and above the greater proportion of them never cause any further trouble. Hertzler, an exceedingly well trained surgeon, thought that the operator had a better chance than the pathologist to decide whether a given tumor in the thyroid was malignant or not. He very calmly put the pathologist in his place by stating: "The surgeon at the operating table can tell whether a thyroid tumor will return or not; the laboratory man cannot". Perhaps a diagnosis of cellular adenoma is as good as we can do on these at the present time.

A tumor which involves similar principles, but is not so common, is the cellular myoma or low grade myosarcoma of the uterus. Certain fibroid tumors of the uterus undoubtedly undergo malignant change; when the cytologic changes are pronounced, we have no difficulty in calling them myosarcomas. In quite a few however, there is marked increase in cellularity with increased numbers of mitoses, and it seems we are somewhere along the road to malignancy, but where the name should be changed, no one can say. Ewing[3] has compromised the issue with two terms, "myoma malignum" and "diffuse intravascular myomatosis", neither of which have had wide acceptance.

Hydatid mole and syncytial endometritis apparently develop gradually in some instances at least, into choriocarcinoma. Trying to decide which of these cases is actually a highly malignant choriocarcinoma is like passing a pointer along a color spectrum and deciding when red is reached. Hertig[4] had attempted to clarify the situation by dividing the whole group of tumors to little more than elaborate grading system.

Tumors of the epidermis, sweat glands, and hair follicles are ordinarily of only low grade malignancy if not frankly benign. As a result, little attention is paid to their exact types. Some sweat gland tumors may metastasize, however, in addition to the squamous cell carcinomas. The issue is confused by several histologic oddities. Basal cell carcinomas sometimes produce small glands and closely resemble sweat gland tumors. A tumor may be frankly basal celled type in one portion and squamous type in another. A small biopsy from a skin tumor may lead to an equivocal diagnosis of "pseudo-epitheliomatous hyperplasia" or "low grade squamous carcinoma". An equivocal or descriptive diagnosis may be all that the pathologist can honestly give.

In theory the lymphomas are quite easy; in practice they are just the opposite. There are classical examples of seven major types of lymphomas which we all recognize in a matter of seconds under the microscope. There is a fairly large group however, which fit no textbook picture. These are attacked energetically by the lumpers and the splitters. The lumpers group them all together as "atypical Hodgkin's disease" or some similar wastebasket term. The splitters subdivide them into about twenty minutiae, culling the literature for terms like "reticulo-endotheliosis", "Letterer-Siwe disease", "reticulosarcoma", "non-lipid lipoidosis", "lymphadenoma" and others. A few are obviously malignant and the whole problem resolves itself into a suitable name. A larger group merely look like an exuberant proliferation of various elements of the reticulo-endothelial system, and the big question is whether they are actually malignant. In addition to pathologic consultation, both the surgeon and the pathologist would probably do well to continue to regard such lesions as problem cases rather than tacking an arbitrary diagnosis on them and instituting radical treatment. Certainly quite a few of them go for from five to fifteen years with little or no treatment.

Papillomas, wherever they occur, pose a graduation problem. Most of them are potentially malignant. The transition is a gradual one and the pathologist may have to give a hedging diagnosis such as "malignant papilloma" or " papillary tumor, probably grade I malignancy". The top is the easiest part to nip off for a biopsy, but the base is the most likely portion to give information on the malignancy of the tumor. In the urinary bladder the problem is so complex that the Armed Forces Institute of Pathology[5] calls them all carcinomas, grading them so that what other laboratories call "papilloma", they call "Grade I carcinoma". Even those who believe in the diagnosis of "papilloma" have shown that if the entire tumor is removed, about 50 per cent of the tumors diagnosed papilloma on superficial biopsy will show carcinoma underneath[6]. In the nose, most papillomas are premalignant or low grade malignancies in contrast to the polyps which are almost invariably benign. In the larynx a similar contrast is present, where we find that what the pathologist calls papilloma in children may recur but practically always pursues a benign course (in the sense that they do not metastasize or invade) while the same histologic designation in the adult constitutes a definite precancerous or cancerous condition.

Polyps and papillomas in the bowel must all be considered pre-malignant. Many of them show cytologic changes which result in their being diagnosed carcinoma, but certainly even many of these may be treated more conserva-

---

[2] Hertzler, Arthur E., *Diseases of the Thyroid Gland,* Third Edition, C. V. Mosby Company, p. 194, (1935)

[3] Ewing, James, *Neoplastic Diseases,* Saunders, 4th Edition, pp. 226-227, (1940).

[4] Hertig, Arthur T. and Sheldon, Walter H., 'Hydatidiform Mole — Pathologico-Clinical Correlation of 200 Cases", Am. J. Obst. & Gynec. 53:1-32 (1947).

[5] *Atlas of Genito-Urinary Pathology,* p. 114, published by American Registry of Pathology. (1946).

tively than the solid type of adenocarcinoma of the colon. Pathologists again differ considerably on the criteria for declaring these tumors benign or malignant, and a discussion of their estimated status along the route to maligancy is probably more in order than a simple diagnosis.

In the kidney we have two types of tumors that make for weak or unreliable diagnoses. One is the small tumor composed of clear cells. Fortunately for the academic pathologist, but unfortunately for the patient, most of these tumors are large and frankly malignant when symptoms call our attention to them. The small ones, however, look benign and usually give a completely benign clinical course. They are usually given the conservative diagnosis of "clear cell carcinoma" but the name certainly overrates their potency. The other small tumor in the kidney which leaves the pathologist out on a limb is the circumscribed papillary tumor of the cortex. A common rule of thumb, and obviously a weak one, is that if they are small, they are benign; if large, malignant. With regard to this system, the Armed Forces Institute of Pathology, in what seems to be a slight understatement[7], says: "Although papillary tumors which attain a large size are almost invariably called carcinomas, the differentiation between benign and malignant types may be difficult and uncertain."

Carcinomas sometimes give their first symptoms as a result of a metastatic deposit rather than the primary lesion. Thus an epidermoid carcinoma of the bronchus may give its first symptoms because of esophageal invasion. If the surgeon takes an esophageal biopsy, the pathologist is almost certain to report back an epidermoid carcinoma of the esophagus; the correctness of his diagnosis depends on the liberality of its interpretation. I recall a case in which a biopsy of an ulcerated lesion of the sigmoid was diagnosed squamous carcinoma of the colon. However, later, at surgery it was found to be an extension from an adenocarcinoma of the ovary with squamous metaplasia. Whenever two organs close together give rise to tumors of similar histology, the pathologist must not be held responsible for differentiation between them.

By the classical concept of neoplasms, they arise from one cell type, and to a certain extent, mimic the parent cells. In practice, however, we find quite a few tumors which vary from one part to another. Hodgkin's disease and bone tumors are two notorious offenders in this respect; they may vary so much in different portions of diseased tissue that two entirely different diagnoses would be reported if separate biopsies were submitted. With the increasing popularity of total prostatectomies, we are seeing more and more tiny carcinomas masked by massive hyperplasia. A spot biopsy would likely be misleading in such cases. The grading of a tumor on the basis of a biopsy is subject to the same error since many tumors vary in degree of malignancy from one portion to another.

One problem that is sometimes handed to the pathologist is deciding whether a given tumor in a bilateral organ such as the breast, is a new primary or a metastasis from the opposite side. Occasionally a definite diagnosis of a new primary tumor may be made, but in the absence of such evidence it is ordinarily not possible to state that a given tumor is metastatic.

Many bacteriologic lesions defy precise diagnosis on the part of the histopathologist. We are all familiar with the characteristic histology of tuberculosis—caseation and giant cells—yet we now know that many of those cases called tuberculosis in the past have actually been other diseases. Tularemia, syphilis, and fungi will, to mention only a few, mimic tuberculosis almost perfectly at times.

All pathology textbooks give "characteristic" pictures of various venereal lesions. Unfortunately most biopsies from them are not "characteristic". Secondary infection plays such a prominent part in most of them that even a carefully taken biopsy may be misleading. The rickettsial diseases are equally important and give equally fallible results on biopsy. The organisms may not be demonstrated in the tissues and the best the histopathologist can say from the tissues is "consistent with" such and such a diagnosis. Inflammations of the skin have resulted in the publication of numerous thick volumes on dermatopathology; when a dozen different treatments are recommended for a single disease, you may be sure that no one of them is very good—I'm afraid our knowledge of dermatopathology is in a

---

[6] Dean, Archie L. "Comparison of the Malignancy of Bladder Tumors as Shown by the Cytoscopic Biopsy and Subsequent Examination of the Entire Exised Organ". Journal of Urology, 59:193-194 (1948).

[7] *Atlas of Genito-Urinary Pathology*, Army Institute of Pathology, p. 66 (1946).

similar state.

The answer to this general problem is that with smears, cultures, serologic tests, etc., there are better methods than biopsy for the diagnosis of most bacteriologic lesions.

In summary then we may say first, that there are a large number of errors inherent in histopathologic diagnoses, most of which may be eliminated by a constant awareness of their possibility. Second, there are many diagnoses which the pathologist may not codify precisely, but instead give the alert clinician enough information to be useful. Third, let us remember the old rule that whenever any laboratory diagnosis disagrees with clinical findings, neither result should be accepted without checking both.

DISCUSSION

Dr. R. H. Fenstermacher (Vicksburg)—Most surgeons would be grossly offended if they were called into consultation by a colleague and told "here is the patient; I can't give you any history, physical findings, laboratory or x-ray reports. What's your diagnosis?" However, it's not unusual for pathologists to be placed in an identical situation by having tissues submitted for examination without an accompanying brief history and in many instances without a notation as to site of biopsy or even the name, age or sex of the patient.

At the risk of being too repetitious I cannot refrain from mentioning cautery biopsy simply to add my vote in condemnation of this procedure.

Surgical specimens should not be incised or mutilated by the surgeon before submitting these specimens to the pathologist for examination. Where the pathologist is readily available the specimen should be submitted as obtained at operation and in all instances the entire specimen should be submitted. The only conceivable excuse for incision of a specimen is to allow for proper fixation prior to pathological examination. As you know formalin solution penetrates only 5-10 mm. and simple incision will ofttimes allow mre adequate fixation of the specimen prior to surgical pathological examination and diagnosis.

Marginal biopsies fail, in many instances, to reveal the true pathological nature of the disease to be diagnosed. This is particularly true of breast tumors where the entire tumor should be excised and submitted for examination if possible to do so.

Concerning "over interpretation" I need only mention that the microscope is the ultimate diagnostic instrument in most instances. We have all seen the enlarged inflammatory lymph nodes associated with the large carcinoma of the breast and the malignant but non-palpable axillary lymph nodes associated with the small carcinoma. I should probably mention that with few exceptions the diagnosis of carcinoma of the breast calls for radical mastectomy.

Errors in handling specimens can be minimized by impressing the importance of this matter on operating room and laboratory personnel who handle the tissue specimens.

It is almost inconceivable to think that there will cease to be differences in diagnosis and terminology so long as there are various schools of thought and so long as the investigative spirit continues. Frequent consultations and discussions between the surgeon and pathologist will do much to establish a firm understanding relative to diagnostic problems. If the pathologist tells the surgeon his patient has a preinvasive carcinoma of the cervix the surgeon should know the exact implications of this diagnosis and be prepared to institute proper therapy.

Emergency frozen sections should be made when indicated, particularly, as stated by Dr. Hare, in diagnosis of breast lesions. Because of the diagnosis even in the hands of well trained pathologists it is foolish to request such report except where the immediate surgical procedure may be influenced by the diagnosis.

Dr. Hare mentions lesions which must be interpreted rather than diagnosed. Having recently seen apparently histologically normal thyroid tissue removed from an osteolytic lesion of the ilium I hesitate to take issue with this statement but sincerely believe that the pathologist can tell more under the microscope than the surgeon can by gross inspection of the lesion. Microscopic pictures of lesions combined with the knowledge of the vagaries of behavior of different tissues combine to give us the ultimate prognostic picture.

In summary, it would seem that errors can and do happen in pathologic diagnosis. The pathologist is responsible for some errors but many are due to faulty collection and preservation of the specimen and lack of understanding of terminology and interpretation of findings. Much of this could be prevented by adequate team work and cooperation between the surgeon and pathologist.

Coronary Insufficiency*

Ira B. Bright, M.D.
Greenwood, Miss.

THE SCIENTIST insists on an exact definition of terms and carefully precise classification, making use of the technique of actual measurement wherever possible. However, he not infrequently introduces a working concept or hypothesis to explain phenomena and to act as a guide for the discovery and better understanding of new ones. It is in this latter class that the concept of coronary insufficiency properly belongs.

It has been known for many years now that sufficiently prolonged deprivation of its oxygen supply would result in the death of myocardial tissue. In fact this is an elementary bit of knowledge. But it has become increasingly apparent only in relatively recent years that it is of the utmost importance to know insofar as possible the manner in which this deprivation of oxygen occurs.

It would be difficult to believe there is a practicing physician who does not know that occlusion of a coronary artery usually results in myocardial infarction, but it is not so well appreciated that infarction can and does occur in the absence of arterial occlusion and even in the presence of essentially normal coronary arteries. When myocardial infarction is precipitated by anoxemia or shock during anesthesia or surgical operation, it may be readily overlooked because the value of pain is lost in the patient's unconscious state, consequently the prolongation of shock or its development, fever and leucocytosis may be ascribed to some other condition and incorrect and ill-advised treatment ensue. Likewise, it is less generally understood that occlusion of the coronary artery may occur so gradually that compensatory collateral circulation may actually keep pace with the process of impairment so that no infarction will occur.

Many students of this ubject believes that the proper concept to employ in arriving at a better understanding and classification of these phenomena is that of coronary insufficiency. This term, they feel, is properly used to describe any state or condition in which the myocardium is suffering from ischemia or anoxemia due to impairment of its blood supply. Whenever coronary insufficiency is present the myocardium undergoes the effect of ischemia and the effects of that ischemia are the same whether they are due to occlusion of a major coronary artery or from diminished blood flow during shock or from anoxemia due to a severe anemia. It follows of course that complete and sudden occlusion of a major coronary artery may well produce a more severe and prolonged ischemia than mere spasm of short duration or inadequate filling due to ostial stenosis and it is equally obvious that the patient with ostial stenosis or sclerosis without thombosis may experience no ischemia save on strenuous effort and that he may well be classified as a potentially insufficient individual. It is on this basis that certain exercise tests have been developed and reveal changes in the cardiograms of such individuals only after such exercise. However, the chief function of these tests has been to aid in differential diagnosis of chest pain, and they are still the subject of much discussion.

From the above it is evident that inadequacies in the quality and quantity of blood which nourishes the myocardium may take place not only as the result of pathological changes in the coronary arteries themselves but also as a consequence of adnormal change in the blood itself and in the dynamics of the coronary circulation. Changes in the dynamics of the coronary circulation may be quite independent of any pathological changes in the arteries.

A great deal has been written and said concerning coronary insufficiency as a clinical entity. The term is intended by some to designate a state somewhat between angina on effort and coronary occlusion· Others evidently have considered it as a situation in which there is a chronic diminution of blood supply to the heart muscle. Master and his associates feel that coronary insufficiency may be best defined as a disproportion between the nutritional requirements of the myocardium and the actual blood supply or coronary flow and state that the simplest manner in which a distinction may be made between coronary occlusion and acute coronary insufficiency is to consider the latter as an episode of angina pectoris varying from slight chest pain and collapse of a distinction between coronary occlusion and acute coronary insufficiency.

---

*Read before the semi-annual meeting of the Delta Medical Society, Greenwood, Miss., April 11, 1951.

If, however, we return to our original conception of coronary insufficiency it will follow that coronary occlusion is one type of coronary insufficiency, that it may occur gradually without infarction or acutely with infarction. It will also evolve that the various degrees of coronary insufficiency present various constellations of clinical signs and symptoms varying from very slight chest pain or pressure on considerable effort or emotion to chest pain and infarction with or without coronary arteriosclerosis.

In the absence of pathology in the coronary arteries coronary insufficiency may arise from coronary ostial stenosis, valvular heart disease (aortic stenosis and mitral stenosis), and cardiac hypertrophy. Chronic anemia, hyperthyroidism and hypothyroidism are among the functional predisposing factors, and the clinical significance of shock, hemorrhage, operation and trauma, cannot be overemphasized. As previously mentioned anesthesia with impaired oxygenation of blood is an important factor. Hypertensive and hypotensive crises are also well known factors in coronary insufficiency as well as paroxysmal tachycardias.

Confusion has arisen by insistence that a distinction be made between acute coronary occlusion and acute coronary insufficiency and still further confusion exists due to the use of such terms as coronary failure and chronic coronary insufficiency. Upon close examination all these terms have essentially the same basic definition, namely, a disproportion between the quality and quantity of blood required by the myocardium and what it receives. If this disproportion is acute and severe as in sudden occlusion of a major coronary artery and the disproportion or ischemia is great and prolonged, and considerable necrosis of myocardium occurs. If it is of short duration as in mild angina on effort then little or no necrosis may occur. If it is due to reflex coronary vasoconstriction such as may occur in acute or chronic cholecystitis, then chronically recurrent coronary insufficiency may occur and be manifest as bouts of anginal pain. Removal of the gall-bladder may greatly benefit such a patient without curing the angina entirely. Properly conducted anesthesia would render such a patient not too undesirable a risk.

The treatment and prognosis of coronary insufficiency depends upon the type. Once the diagnosis of coronary insufficiency has been made the most important decision from the standpoint of treatment and prognosis is whether or not myocardial infarction has occurred. The extent and severity of this, and in fact its very occurrence, depend for diagnosis and evaluation on the appearance of certain electrocardiographic changes, sedimentation rate increase, fever, and leucocytosis. The pain of coronary insufficiency not due to occlusion and that due to occlusion may be indistinguishable. In general it is not really possible to set time limits for duration of pain, that will distinguish between angina pectoris and myocardial infarction. One may safely generalize by stating that any pain of cardiac origin that persists for many minutes while the patient is at rest raises the question of myocardial infarction. It is generally well recognized that the pain may occur in relatively unusual locations such as the wrist, elbows, and jaw or even the face and usually no difficulty is encountered of late years by the reasonably well informed practitioner in recognizing the pain as that of disturbance of the coronary circulation.

It is apparent that hospitalization is not indicated for a clear cut case of angina on effort where the physician can feel reasonably certain after examination and cardiograms that no infarction has occurred. Effort is then directed toward ascertaining as far as possible the type and cause of the coronary insufficiency manifesting itself as angina on effort. In case infarction has occurred or is strongly suspected, hospitalization, oxygen and morphia as needed are indicated while studies are under way to determine the type and cause of the coronary insufficiency that resulted in infarction.

The concept of coronary insufficiency should prove useful to the busy general practititoner if for no other purpose than as a constant reminder that occlusion of a coronary artery is not the only cause of myocardial infarction and that a careful evaluation of each case on its merits is absolutely mandatory if correct diagnosis and treatment is to ensue.

REFERENCES:

1. Boas, E. P. and Boas, N.F.: Coronary Artery Dis-

ease. Chicago, The Year Book Publishers, Inc.,
2. Freedberg, A.S., Blumgart, H.L. et al.: J.A.M.A. 138:107, 1948.
3. Master, A.M. et al.: Am. Heart J. 24:277, 1942.
1949.
4. Master, A.M. et al.: Am. Heart J. 18:434, 1949.
5. Wheeler, Chas. H. et al., Med. Clinics, North America, May, 1950, 685:696.

Medical Aspects of Atomic Warfare and Radioactive Isotopes

Woodrow W. Payne, M.D.
Cleveland, Miss.

WHAT LITTLE I know about my subject was derived from the experience I gained in treating the Japanese in Hiroshima for a period of four months following their surrender and just a few weeks ago I had the privilege of attending a very intensive two-week course at the National Medical Center in Washington devoted entirely to the medical aspects of atomic warfare.

I know that many of you feel that you will never have need for any knowledge of atomic medicine because of our rural location and the distance of large cities from our area and the feeling that the United States will not be attacked. I hope and pray that this optimistic attitude is sound, although I am fearful that it is not. My reasons are as follows: 1) It is an established fact that Russia has atomic bombs. 2) Virtually all of the lecturers in Washington, which included the most outstanding civilian and military authorities, consistently used the expression "when atomic bombs are dropped on us" rather than "if they are." 3) Evacuation of Washington is considered a certainty by most and I saw an amazing amount of preparation toward that end. 4) It is the plan of the National Civilian Defense to organize a 100-mile radius evacuation area around each city over 100,000 in population. This includes not only the towns with hospital facilities, but also towns with only school buildings which will serve as temporary hospitals. Consequently, most of us would fall within the approximate 100-mile radius of Memphis or Jackson or both. 5) And most important, I am not at all sure that if the United States were bombed, only cities of over 100,000 would be in danger. No one knows how many bombs the Russians have, but if they have anywhere near the number we have, then there isn't a town in the Mississippi Delta or elsewhere in the United States that is safe from attack. I repeat for emphasis — IT IS SOUND MILITARY JUDGMENT TO EXPLODE ONE ATOMIC BOMB ON ANY GROUP OF 100 OR MORE ENEMY SOLDIERS. Furthermore, if it killed only 100, it would be cheaper for us than killing 100 in Korea today with the methods used there. That ratio of one atomic bomb to 100 people holds true for the hordes of Communist Chinese and Russians alike. That should give you an idea of how well prepared we are. My authority for the above facts is, I guess, the "fightenest" man in the world today, Col. H. G. Boehm, USMC, the man who led, I repeat led, not directed, the Iwo Jima invasion as well as numerous other Pacific Island invasions.

In view of the above facts, I am convinced that every physician in the United States should have some general knowledge of atomic medicine.

Atomic bombs can be exploded in four ways: 1) in the air 2) on contacting the ground 3) under water 4) underground. Their effectiveness is also in that order. The air explosion is so many more times effective that in my discussion I will have reference to an air explosion above 1500 feet and will not discuss the others as they are of very little significance. The bombs of the Hiroshima and Nagasaki type are equal to 20,000 tons of TNT. Energy released by an atomic explosion is 20 million times more powerful than in the explosion of an equivalent weight of TNT. In the consideration of the medical aspects of atomic bomb explosions three divisions can be made: 1) thermal radiation or flash heat 2) blast injuries and 3) nuclear radiation. Their severity is also in that order. The radiations which have been so greatly publicized and so greatly feared are the least important and account for only 10 to 15 per cent of the fatalities, while burns are responsible for 60 to 70 per cent, and blast injuries account for 15 to 30 per cent.

I. Thermal radiation is a flash of heat which

---

*Presented before the Delta Medical Society, Greenwood, Miss. April 11, 1951.

is more than one million degrees centigrade and travels with the speed of light. It will fatally burn all exposed people within a radius of one-half mile. It will cause burns to exposed flesh with a diminishing degree of severity to a distance exceeding two miles. These burns are simply heat burns like those all of you see from kerosene and gasoline explosions. The ball of fire which creates the heat exceeds the brilliance of the sun over 100 times. This starts secondary fires in wooden buildings, etc., which will be the cause of additional people being burned. Protection from thermal radiation beyond 1000 yards can be had from any shelter which, of course, doesn't collapse or ignite. Clothing affords a great deal of protection with white and light clothing being the best. We saw this vividly demonstrated in Hiroshima by the women who had been wearing the typical Japanese kimonos. The area of their bodies covered by the light-colored flowery cloth was, in many instances, not burned at all while the area covered by dark patterns was severely burned. Also beneath the obe or waist band, which is many times thicker than the kimono but usually of a dark color, there were severe burns. There were 75,000 burn cases at Hiroshima. The minimum severe burns to expect is 1 per cent of the population with moderately severe burns serious enough to require hospitalization amounting to 25 per cent. Just to impress that fact let us say a bomb was dropped on a city of 800,000. We would have the following: 1) 200,000 casualties, killed or injured; 2) one third or roughly 65,000 would be killed or die the first day; and 3) the two-thirds or 130,000 surviving casualties would require medical care; 4) 30,000 of this group would die within a period of 5 or 6 weeks but would require medical care; 5) 100,000 would require hospital care; 6) to treat the burned cases alone, you would need 30,000 miles of bandage, 500,000 liters of I.V. fluids, 400,000 pints of plasma, 800,000 pints of blood —approximate cost $5,000,000.

I think it should be obvious now why all physicians within a 100-mile radius will be called upon. We also know how demanding a burn is of care. An example is the nightclub fire in Boston several years ago. There were 300 hospital cases — all of them with burns. Part of these had to be flown to other cities for even in as great a medical center as Boston the 300 could not be cared for there. What would they do in case of an atomic explosion in which they could expect 100,000 to 125,000 burn casualties?

We are all familiar with the conventional fluids and pressure dressings used in the treatment of burns so I will omit them and mention only a few of the latest developments: 1) ACTH. The number of case reports on the use of cortisone are limited, but there are very definite indications that immediate relief and life-saving results have been obtained. The initial shock period of serious burns, which is so often fatal, is amazingly reduced. Morphine is not required for pain as it is absent or at a minimum. Pressure dressings are not required when cortisone is used. The required dosage is often very small — as little as 25 mgm.q 6 hours. I would like to mention that in burn cases where ACTH is not used, it has been found that one-eighth grain of morphine will afford just as much relief as one-fourth or one-half without the side effects. 2) In cases of a large number of burn cases where there is a shortage of plasma or blood, it has been found that the oral administration of 15 pints q 24 hours of a salt solution composed of one teaspoonful of table salt, one-half teaspoonful of sodium citrate, and one teaspoonful of baking soda to a quart of water maintains body fluids levels without the urgent need of blood or plasma.

II. Blast Injuries—The blast or shock wave is the greatest factor of the atomic bomb in producing destruction of property and the second greatest factor in producing casualties. Fortunately, the human body is very resistant to pressure and can usually withstand 30 to 35 pounds per square inch without fatal results. An atomic blast produces a pressure exceeding 35 pounds per square inch for a radius of 1,000 feet, and thereby produces direct fatal injuries through pressure within this area. However, far more to be feared than the direct pressure is flying debris such as glass, planks, and other miscellaneous objects, and the injuries received in being buried beneath wreckage, collapsed buildings, etc. Up to a mile radius, all buildings except those of heavy concrete and steel construction, will be gutted or completely destroyed. Up to a radius of four miles, weak wooden structures will be destroyed and secondary fires ignited. Injuries from falling plaster and flying glass will occur in a radius of up to 10 miles. This blast factor will produce injuries of every description—rupture of ear drums, sinuses, lungs, liver, spleen, kidneys, and hollow viscera. Fractures, hemorrhages, open wounds involving all extremities and body cavities and burns, burns, and more burns will occur. The care for these injuries is no different from those seen in your everyday practice.

III. Nuclear Radiation—This is the factor which will cause mass casualties through hysteria among the citizens and doctors too if they are not better acquainted with it. Ordinarily most people retain some degree of reasoning in the presence of fires and falling buildings, but let them think that a ray which they cannot see, hear, or feel is after them, they go completely haywire and lose all their reasoning facilities. This is illustrated by the reaction of the Japanese. Their medical officers told us that immediately following the Hiroshima explosion everyone pitched in and started doing all he possibly could to save the injured and fight the fires. Within 24 hours, the word was widely spread that the bomb was of a new type which had deadly rays. Immediate panic resulted which killed thousands and allowed thousands of others to die, because the uninjured would not touch a burned person or pull an injured person from under debris for fear of contacting the "RAY." That same thing will happen here in the United States unless people are better informed and they will believe you, their family physician, more quickly than anyone else. The truth of the matter is that nuclear radiations alone will account for far less than 15 per cent of the fatalities, for the effective range where 50 per cent of the people will receive a lethal exposure is 1400 yards. I have already pointed out that the thermal radiations will kill all exposed people through burns within a radius of one-half mile and that blast injuries will destroy virtually all buildings within a mile radius, so the chances of being killed by radiation alone is very slight. We saw a few in Hiroshima who died from radiation without having fatal burns or injuries but they were very few. The median lethal dose, i. e., that amount of radiation which will be fatal to about 50 per cent is 400 roentgens of radiation received over the entire body in the course of a few seconds. At point O directly beneath the bomb site radiations are 100,000 r. This diminishes to 400 r at 1400 yards. Concrete offers more protection against radiation than any other building material. For example, if an atomic bomb was exploded over Macy's Department Store in New York City or any other 8 to 10 story modern building, one would be perfectly safe from radiation on the ground floor. Of course the chance of living through the falling walls and debris would be slight indeed. Of academic interest is the fact that atomic radiations are of two types: The external radiations are composed of the neutron and gamma rays and the internal radiations are composed of the alpha and beta particles. The neutron and gamma rays of external radiations are similar to conventional x-rays. They are, of course, invisible and painless. The neutrons flash out for a radius of 2000 feet in less than a second. Obviously there is no defense. The gamma rays have a greater range than the neutrons and produce lethal ionizations in a radius of half a mile. The neutrons and gamma rays are dispersed into the sky after having released lethal ionization over a radius of 1000 yards followed by a flash of sub-lethal rays for more than a mile where the measurement is less than 100 r. The radiations have expired in less than 90 seconds, therefore it is safe to go directly to the point where the bomb exploded after 90 seconds. Obviously there is no need for a Geiger Counter which is better known as "A Gook Counter for Gooks!" This is very important for our civilian population to know for otherwise many firemen will be afraid to fight fires in the bomb area, many of the rescue teams will be fearful of going close to the bomb site, and even a few doctors might be hesitant about going too close in.

The internal radiations are composed of alpha and beta particles and have to be deposited within the body by ingestion, inhalation, or through open surface wounds. They are present in dangerous amounts in underwater, ground, and underground explosions, but are of no clinical significance in the air explosion which is the type we will receive. The biological effects are the same from internal or external radiations. The leucocytes, germ cells, and gastro-intestinal mucosa are the most vulnerable. Striated muscle, fat and ganglion cells are highly resistant. This has been beautifully demonstrated by Dr. Shields Warren.

The true genetic effect is quite different from what ballyhoo had it. The only concrete effect we noted in Hiroshima and this has been borne out by all subsequent investigations, that all pregnant women within the radius of approximately a mile miscarried very soon afterward. No monstrosities were born, no deformities above the average percentage. No genetic effects have been discovered to the present time. Possibly some may show up in the second and subsequent generations but they are not expected.

There are probably a few of you interested in the sterility factor, for your patients, of course. I don't think I can explain it half as well as one of our lecturers, Dr. Lapp, who in association with Dr. Compton, won a Nobel Prize Award. His answer was, "Joe, it takes 400 r to sterilize you. Half the people who receive 400 r die, the other half are so damn sick that fornication is the least of their worries." Ionizing radiation can cause permanent sterility but requires about 400 r which is the median lethal dose. Temporary sterility did occur in many Japanese both male and female, but practically all of them returned to normal within a year and many have produced normal offspring since then.

The diagnosis of radiation sickness is made chiefly from vomiting, for blood counts cannot be made on all the casualties. Vomiting may occur after several minutes to several days, but the more prompt the onset of vomiting, the more severe the radiation.

I haven't time to go into the question of radioactive isotopes, but suffice it to say that their application to clinical medicine has been very disappointing. Radioactive gallium has been used in orthopedics. It is said to have a selectivity for bone metastases of carcinoma. It will indicate on x-ray by accumulating in the portion of bone where metastases is before there are symptoms or even before it is visible to the orthopedic surgeon when he visualizes it directly in exploration.

In summary I would like to emphasize three factors. They are:

I hope that none of us will need any knowledge of atomic medicine, but I am afraid all of us might.

Help quiet the fears of the people concerning atomic bombs. Explain to them that the fear of rays is unwarranted and that the only things to fear are those factors common to any other explosion, i. e. burns, falling walls, debris, glass, etc. Furthermore, the atomic bomb will not end the world either directly or indirectly through sterility, for very few if any cases of permanent sterility occur.

Seriously consider how you alone would care for even 100 seriously burned cases. I urge you, gentlemen, think about it.

Medicine of the Year—1951, published by J. B. Lippincott, with Dr. John B. Youmans as editor of Vanderbilt University, is a book that should be on the desk of every doctor. In a very condensed and concise form, it brings you the progress in medicine up to date. Internal medicine, psychiatry, obstetrics and gynecology, pediatrics and general surgery are reviewed and brought up to date in all phases of new discoveries.

The medical profession, the dentist, the pharmacist, the nurse and the hospital constitute the working unity for medical service to all the people.

A hospital, generally speaking, is as good as the doctors behind it.

The Gay Treatment of Asthma

Fred S. Gay, M.D., and Elmer D. Gay, M.D.
Biloxi, Mississippi

IN RESPONSEA to many requests from fellow members of the medical profession we attempt to explain briefly our procedures in treating asthma. Follow-up articles will be published from time to time.

In our opinion bronchial asthma falls into the category of stress and strain diseases. It is generally held that specific etiologic factors have not been satisfactorily proven. We know there are definite hereditary trends. It is likely that there are certain deficiencies within the average patient: i.e., potassium and calcium as found in serum levels in a small series of patients. There is also a corresponding increase in serum sodium. Additional blood chemistry studies should be made. These patients have a marked hypotension. They also reveal increased nervous tension and, often, emotional instability. They are ambitious, hard working people. Their intelligence is above normal and they display unusual drive in reaching their objectives. The psychosomatic aspects of these cases must be considered on an individual as well as on a family and group basis. We believe, in some instances, the psychogenic origin of asthma has been well demonstrated. We shall not attempt to classify asthma since this has been well handled by standard treatises.

The treatment of asthma falls into three patterns:

1. A sympathetic approach to the patient's every day problems. This consists of a good general history, physical examination, reassurance as to his prognosis, and the inclination on the part of the doctor to do everything possible to help his patient. Too often reliance has been misplaced on a diagnostic machine or a series of misguided, highly technical procedures in the hands of unsympathetic technicians. The advocated therapy based on the interpretation of results thus obtained is often out of all proportion to the simple requirements of the average patient. Restrictions on diet, activity and normal living have left the patient with the feeling that he has little hope, or capacity, for the normal pursuit of life and happiness.

2. Medication employed falls into two groups; that for the relief of the acute attack and that for permanent relief.

a. We utilize, sparingly, all the standard accepted procedures for controlling the acute attack. These have been well covered by current articles of leading physicians and need not be described here. We attempt to wean the patient from these procedures in the first four days of treatment and succeed in the majority of cases. This does not mean that the patient does not subsequently require these procedures since he occasionally suffers a relapse, although usually not in severe form. We feel that the patient in status asthmaticus is over-medicated, over-stimulated and is the victim of a vicious cycle which rapidly leads to exhaustion and depletion of his normal reparative processes.

b. Our basic medication for permanent relief consists of small doses of Fowler's solution, potassium iodide and phenobarbital. This is usually put in an aqueous solution, or suspension, to which is added a few minims per dose of tincture digitalis for catalytic effect. Sometimes an inert coloring substance is added and occasionally it is omitted. Sometimes we substitute, or add, a sweet, syrupy vehicle to improve palatability. In most cases a saccharin tablet is added. Consideration must be given to the general health of the patient, also to age, weight, nervous tension, and history of drug sensitivity. The usually accepted dosages by age and weight do not always apply to asthmatic patients: i.e., a middled aged, obese patient may not tolerate as much medication as a slender adolescent patient of 14. In the initial phase of treatment we rarely use more than 10 minims of Fowler's solution daily and seldom use over 15 grains daily of potassium iodide. The dosage of phenobarbital is usually less than 3-4 grain daily. We employ these drugs in gradually decreasing daily dosages depending on the patient's periodical report of progress. We believe that calcium preparations are beneficial but should not ordinarily be given to cardiac cases, arteriosclerotic, or elderly patients. We emphasize the need of normal daily intestinal evacuation and use bile salt preparations, where indicated, to increase the billary flow. Many asthmatic patients suffer from constipation, often due to over-medication with relief drugs, and require laxatives such as cascara, milk of magnesia, or sodium phosphate solution. For the obstructed allergic nose which usually accompanies asthma we sometimes use nose drops of amphetamine solution (2 drams in 2 ounces of light liquid petrolatum). This is used intermittently, and often without benefit, for relief of nasal congestion.

The medication described briefly above is used over a period of two years but the amounts employed to maintain control of symptoms depend entirely on individual reaction and has wide variation. In general, we find that the patient after six months may get along on a maintenance dosage of 1-3 of the daily dose initially required.

We believe that acute respiratory infections and chronic bronchial infections should be treated promptly and we often recommend the use of Penicillin, Aureomycin, Chloromycetin or Terramycin. We have found the antibiotics to be useful aids in controlling cases of bacterial origin or bacterial aggravation. Since Chloromycetin is a synthetic antibiotic it is much better for the average case as it does not cause severe adverse reactions.

Except in unusual cases we employ the antihistamines only as a relief agent — best results are found in children and in cases of recent origin which have not been over-medicated.

3. The third, and most important phase of treatment lies in patient control. To gain this control we insist that the patient be seen by appointment only, fixing in his mind the second step which is thorough indoctrination for the necessity of following our instructions carefully. This is accomplished by seeing the patient for a period of approximately one week with daily examination, interview and instructions. During this period of time the patient comes in contact with others thereby providing an excellent opportunity for self and group therapy. The third and final step is the periodic progress report to be rendered after the patient returns to his home. This is furnished by the patient or the family physician depending on the circumstances. This report is submitted for a period of two years or until termination of the treatment. He must be taught to avoid the all too familiar nebulizer, the adrenalin injection, and the aminophylline by vein. He must remember that ephedrine preparations also have undesirable side reactions. None are to be used except in bona fide emergency. He is encouraged to contact his family physician for advice. We wish to maintain a close cooperation with the patient and his physician. There has been considerable mis-information and misunderstanding on this score. We are always ready to furnish the family physician information concerning the nature of the treatment. There is no secret formula employed unless it be that of experience. It should be clearly understood that the requirements of one patient may constitute a menace to the health of another and we cannot condemn too strongly the tendency to treat all patients with an identical prescription.

We do not employ skin tests or desensitization injections because we believe that no useful purpose is served by this more or less orthodox procedure. We believe that we accomplish a general desensitization by means of our method of treatment. We do not regard our procedures as curative but we have had a large number of patients (representing every state in the Union and every social and economic plane) go through this clinic, and progress reports have been favorable in the great majority of these cases. We have cases of record extending over a period of thirty years. There have been no known deaths attributed to the medication, but there have arisen occasional episodes of arsenical and iodide reactions which have been corrected without mishap. The danger in this treatment lies in the injudicious use of arsenic and potassium iodide. It has been previously held by some authorities that prolonged use of these drugs is harmful, but we have not found it so in our procedure, where we take every reasonable safeguard to avoid mishap.

We do not get good results in treating those complicated cases in which there is a considerable amount of bronchiectasis, emphysema, or cardiac decompensation. Likewise, treatment is contraindicated in cases of cirrhosis of the liver or chronic nephritis. Formerly we refused to accept cases having tuberculosis in any stage but now we occasionally treat specially selected cases of arrested tuberculosis after careful consideration of all factors including recommendation of their physician.

No discussion of the management of asthma is complete without reference to the cortical hormones. We have noted the rise and fall in the prestige of Cortisone and ACTH with great interest. It is our considered opinion that these hormones have been disappointing and are often dangerous. Many cases of asthma show a temporary complete clearing of symptoms but this is followed by a false sense of security and well being. The mental depression, edema, euphoria, gastric disturbance, nervous system involvement and skin changes seem to indicate a powerful and uncontrolled force at work. It is realized that these reactions usually follow overdosage or prolonged use, but the patient is a desperate individual and often continues the medication without medical supervision. When other measures are ineffective Cortisone may be helpful in reducing bronchospasm and—or tracheal spasm associated with edema of the bronchial tree. This type of case is psychosomatic and shows definite apprehension and often a panic reaction. In such cases, it should be followed up by the more conservative procedure. Until more research and investigational work has been done, we believe the cortical hormones should not be employed except under strict supervision in an adequate hospital.

Many patients initially reporting to us call our attention to the fact that they have been under previous treatment with iodides and arsenic for many months with little relief, even reminding us they have been informed that it is our secret formula. Failure of relief had led to early discouragement of the patient and had most assuredly discouraged the doctor in what we believe the most efficacious treatment of the present day. To appreciate that no material change has been necessary during the past thirty years lends credence and confidence to our staff physicians who must bear the burden of criticism when the unpromised cure does not materialize.

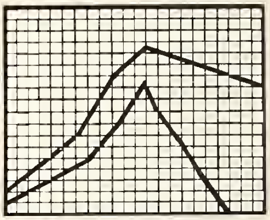
We believe the unusual success attributed to this treatment is due to many and varied factors which do not lend themselves to graphical analysis. We do, however, have the full confidence that has been instilled by trial and error that the patient suffers less pathological change than from any other medication that has been offered to the asthmatic sufferer of this date.

When modern medical science determines the etiology of asthma there will be widespread revisions in therapy.

IN RHEUMATIC FEVER • RHEUMATOID ARTHRITIS • OSTEO-ARTHRITIS • GOUT • FIBROSITIS

Pabirin

the original
SODIUM FREE
Salicylate-Paba Combination



Paba in this combination causes a salicylate blood level increase of two to five.

FOR EFFECTIVE SALICYLATE BLOOD LEVELS

For a fortified salicylate therapy, free of certain undesirable effects of a salicylate alone, para-aminobenzoic acid now has been combined with acetylsalicylic acid (aspirin). Pabirin, Dorsey, is such a mixture.

Pabirin causes a salicylate blood level increase of two to five, and in rheumatic fever, produces an effective level of 35 mg. per 100 cc. For this result, less of the Pabirin mixture is required than of a single salicylate. *In cases where sodium restriction is indicated, Pabirin is favored over other salicylate combinations.*

The most important factor in Pabirin's maintenance of salicylate blood levels, probably, is *the synergistic action of para-aminobenzoic acid upon the salicylate.* By replacing sodium salicylate with aspirin, and including para-aminobenzoic acid, which tends to produce an acid urine, Pabirin *decreases the urinary output of salicylate. Thus higher blood levels of salicylate are assured with Pabirin than with a salicylate alone.*

References

Belisle, M., Fievre Rhematismale. Union Med. Canada 77, 392 (1948).

Dry, T. J., Butt, H. R., and Scheifley, C. H., The Effect of Oral Administration of para-Aminobenzoic Acid on the Concentration of Salicylates in the Blood, Proc. Staff Meetings Mayo Clinic, 21, 497 (1946).

Tierney, N. A., Effect of para-Aminobenzoic Acid in Tsutsugamushi Disease. J.A.M.A., 131, 280 (1946).

Grekin, R. H. and Zarafonetis, C.J.D., A Reducing Substance in the Urine of Patients Receiving Sodium para-Aminobenzoic Acid J. Investigative Dermatol. 12 ,319 (1949).

Gold, H., Treatment of Rheumatic Fever. Cornell Conference on Therapy, 1947.

Hoagland, Robt. J., M. D., Para-Aminobenzoic Acid in the Treatment of Acute Rheumatic Fever, Aug., 1950. Amer. J. of Med., 9, No. 2, 272 (1950).

SMITH-DORSEY *Division of* THE WANDER COMPANY LINCOLN, NEBRASKA • Branches at DALLAS • MEMPHIS • LOS ANGELES

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton .... Oxford
President
Dr. J. G. Thompson .... Jackson
President-elect
Dr. T. M. Dye .... Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. .... President
Greenville, Miss.
H. T. Smith .... President-elect
McGehee, Ark.
L. T. Carl, M.D. .... Vice-President
Jackson, Miss.
D. T. Owens, M.D. .... Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. .... Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

CANCER CONTROL

GUEST EDITORIAL

Felix J. Underwood, M. D.

In the field of cancer control in Mississippi and the nation, the work is divided into several sections. Professional education is a most important section and has as its major objectives the increasing of opportunities for dissemination of cancer information among professional persons and groups and the improvement of the methods of such educational effort.

What could be more important than the education of the public about cancer and its control? Efforts are constantly being made to develop community public health education programs, to strengthen the public health education program in business and industry to develop a seven-point educational program for a better understanding of the individual danger signals of cancer and to obtain more balanced local public educational programs through the use of a wider variety of educational techniques in professional education and public education for the laity. A number of good films on cancer and current literature are available to those who are working at the jobs.

In the cancer service program contest efforts are made to develop a comprehensive program on home care for indigent and semi-indigent cancer patients, to define plans for utilizing full community resources in state and county cancer service activities, to demonstrate a complete state cancer control program well coordinated and carried out, to encourage the establishment of cancer control programs in our growing industrial population and to assist in the establishment of cancer clinics and cancer diagnostic clinics.

Another section of the cancer control program is statistical research, and by this is meant the promotion of the use of standard methods of reporting and results in the treatment of cancer, to provide statistical consulting service and to make studies or surveys, to plan and carry out epidemiological research projects, to plan and carry out research on the histologic classification of neoplasms, to encourage and assist in the development of cancer registries, also, the preparation of bulletins and lantern slides and provision for information for current, reliable information on cancer statistics.

The volunteer recruitment and training in our cancer work is important, and further efforts must be made to develop a program for recruiting men and women volunteers. They must not only be taught how to help, but what to do once they are trained. Instructive materials in community organizations should be improved, and we must have more and better community organizations throughout the state. The broader the base, meaning the more people who will work toward the conquering of the cancer problem, the sooner will the problem be conquered. This is not a job for piddlers or fund raising once a year. We must work at the job continuously. The volunteers, of course, cannot devote their whole time to the work, but they can have a continuing interest and the will to do whatever is necessary when it is necessary to do it and not feel that once a year we must raise some money and let it go at that.

These cancer cases, especially the terminal cases at home, must be cared for in the best possible way. We are, indeed, our brother's keeper, and it is inhuman not to feel exactly that way

Fund-raising, of course, is necessary, and we need very much to strengthen the educational aspects of local fund-raising campaigns. Much educational work can be done during the fund-raising season, and in order to raise more money which is so sorely needed. we have to have more and better trained and indoctrinated volunteer campaign workers. Study must be given to the improvement of local fund-raising campaigns through the wider application of proved techniques of fund-raising.

One could not fail to mention the field of good publicity. The press and radio have been exceedingly helpful and but for those friends, the press and radio. the public would not have been nearly so familiar with the American Cancer Society, and we would not have achieved maximum acceptance of the American Cancer Society as the independent organization fighting cancer through research, education and service to the cancer patient. We must step up our efforts to disseminate information about cancer in warm, human, encouraging terms with emphasis on curing cancer cases, and the American Cancer Society's achievements, We badly need to develop and promote uniform procedures for year-round local public committees who will not hibernate most of the year, but remain active from campaign to campaign. All in all, the cancer program in Mississippi has done a very satisfactory job. The physicians and surgeons, this organization and the citizens generally have been most intrested and active, but more effort will be necessary on the dawning of the day when cancer, like malaria, typhoid, diphtheria, and many other diseases of the past, will pull down its flag and surrender as one of the chief enemies of the race.

FUNCTIONING WELL

Medicine in Mississippi, we think is as free of politics, generally speaking, as any state we know. Members of the State Board of Health are nominated by the state medical association and then from the list submitted three are appointed by the governor. Our executive secretary is in turn selected by the members of the board. This has worked mighty well. Our Sanatorium for treating tuberculosis functions chiefly under the State Board of Health. It has done a masterful piece of work. Dr. Underwood, as executive secretary of the State Board of Health, has put our state at the top in public health work. It seems to us that it would be well to let the organization continue as it is, neither taking from nor adding to.

The time has come when every doctor needs to be interested in civic affairs and should also inform himself in political matters and vote to promote the general welfare to the best of his knowledge.

In reality the doctor, the pharmacist, the dentist, the nurse and the hospital make up the medical service unit. The personal interest and the sacred relation that has existed between the patient and the family physician needs to exist between the medical service unit and the individual patient.

The challenge to the medical profession is to build a citizenship adequate to meet the needs of human society and to inspire it to nobler undertakings.

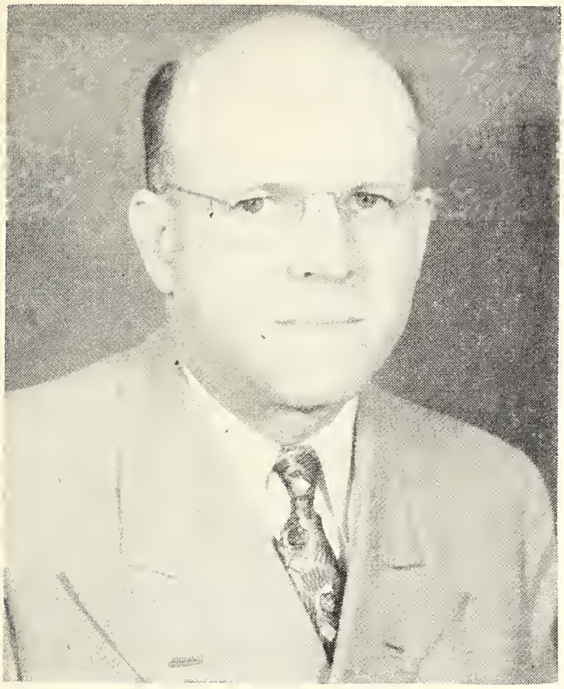
The sick patient is the charge of the doctor even if the ailment be hysterics.

According to our notion, the Mississippi State Board of Health is doing a fine job for the state of Mississippi under the able leadership of Dr. Felix J. Underwood. The coming legislature, we think, would do well to follow his advice and fear no evil.

Some people have a backbone a bit out of place, or an intravertebral disc, but we do not believe everyone has, as some practitioners would have us believe.

The fight on the female anopholes mosquito and some others should not let up until malaria is whipped out of existence.

News and Comment



HOSPITAL ASSOCIATION PRESIDENT

Dr. A. V. Beacham, chief of the surgical staff and administrator of the Beacham Memorial Hospital, Magnolia, Mississippi was elevated to the presidency of the Mississippi State Hospital Association at the annual convention in Jackson this month. Dr. Beacham and his brothers founded the Beacham Memorial Hospital in memory of their father, Dr. W. D. Beacham, one of Mississippi's pioneer public health workers and an active participant in the affairs of organized medicine in the generation preceding the entrance into the profession of his four prominent sons.

Dr. W. D. Beacham, professor of clinical gynecology and obstetrics at Tulane University, is this year president of the National Federation of Gynecological and Obstetrical Societies of the United States, has received the Medical Record's honor prize of the American College of Surgeons and has attained many other national medical honors. Dr. Hugh T. Beacham, professor of clinical urology at the Louisiana State University Medical School, has served as president of the New Orleans Urological Society, has been a member of the board of directors of the Southeastern Urological Society and of the New Orleans Postgraduate Assembly and like his other medical brothers has brought honor to the name of a worthy father.

Dr. Dan W Beacham, the youngest of the four brothers, recently completed his residency in gynecology and obstetrics at Charity Hospital in New Orleans, Louisiana. He has received certification by the American Board in his specialty and is associated with Dr. W. D. Beacham in private practice in New Orleans, in addition to being an instructor on the staff at Tulane University.

Dr. A. V. Beacham's memberships include the Mississippi State Medical Association (council), the Pike County Medical Society (past-pres.), the Mississippi Hospital and Medical Service (board of directors), the Mississippi Cancer Society (executive committee), the Mississippi Academy of General Practice (board of directors), the Southeastern Surgical Congress, and the American College of Surgeons. He was educated under the Commonwealth Fund Plan, being a recipient of a scholarship which required him to return to Mississippi to practice for a three-year period following his hospital training at Charity Hospital in New Orleans. Following the termination of his contract he decided to spend the remainder of his life as a country doctor. Accordingly he proceeded to surround himself with adequate facilities by building the hospital at Magnolia. His brothers who reside in New Orleans assist in his country practice by making frequent trips to Magnolia.

WILKINSON-AMITE MEDICAL SOCIETY

The regular meeting of the Wilkinson-Amite Counties Medical Society was held Thursday evening, September 27, at Centreville, Mississippi, under the auspices of the Field Memorial Community Hospital.

Following a delightful dinner, the meeting was called to order by Dr. D. H. Thornhill, presiding.

Dr. Ezelle, new addition to the hospital staff, was elected to membership in the society.

The following guests were presented by Dr. S. E. Field, secretary of the society: Dr. and Mrs. Paul Jackson and Dr. Clovis Toler, Clinton, Louisiana; Dr. and Mrs. Robard and Dr. and Mrs. McGruder, Jackson, Louisiana; and Dr. R. B. Zeller, Hazlehurst.

Dr. Carter O'Ferrell, gynecologist, Jackson, gave an excellent paper on the diagnosis and treatment of acute pancreatitis, presenting several interesting case histories. Dr. T. B.

Wilson, cardiologist, Jackson, presented a most enlightening review of the cause of chest pain with differential diagnosis and treatment. Both papers were discussed generally by the guests and members of the society.

At the last regular meeting in July the group was honored with the presence of the president of our state medical association, Dr. Grant Thompson, Jackson, who was the principal speaker for the occasion.

STATE ASSOCIATION EXECUTIVE SECRETARY

Mr. Rowland B. Kennedy

In accordance with a directive of the House of Delegates of the Mississippi State Medical Association May 17, 1951, the Council, at a called meeting on September 19 at the Robert E. Lee Hotel in Jackson, with the approval of the secretary and president of the Association, employed Mr. Rowland B. Kennedy as executive secretary for the Association, effective September 20, 1951.

Mr. Kennedy is a native of North Carolina and a graduate of Millsaps College. He is married to the former Miss Doris McWilliams of Yazoo City. He is thirty-one years of age and resides at Clinton, Mississippi.

He was formerly employed for more than three years as State Program Director in the State Department of the American Legion. He assisted in organization planning and post activities. He arranged for district conferences of the Legion and served as managing editor of the state-wide newspaper "The Mississippi Veteran" for more than three years. Mr. Kennedy assisted in preparing and distributing favorable publicity for the establishment of the four-year medical school in cooperation with the president of the State Medical Association. He has published several articles in "The Mississippi Veteran" pertaining to the dangers of socialized medicine.

He is a veteran of World War II and the Korean struggle. Offices have been established in Room 508, First Federal Building, Jackson Mississippi.

85 DOCTORS HAVE ACHIEVED STATE'S 50-YEAR CLUB SINCE ORGANIZATION 3 YEARS AGO

Since the fall of 1948, 85 physicians have become members of the Fifty-Year Club of the Mississippi State Medical Association.

The membership certificate honors the physician for having served his neighbors and the people in his community faithfully and well and having brought honor to himself and the professions as a practitioner of medicine for 50 years or more.

The Fifty-Year Club of the State Medical Association was organized in Jackson during the May, 1944 meeting of the State Medical Association. Dr. William Augustus Evans, a native of Mississippi, but a well-known citizen of the world, suggested the idea of a Half Century Club. His name was a household word in the Mid-South associated with the "How to Keep Well" column of the Commercial Appeal.

Concerning the organization, the following statement was made: "There are no greater heroes to be found in the second world war conflict than the eligibles of the Half Century Club, or those doctors for 40 to 60 years, who had planned to retire, or who had retired, but realizing the need for their services, have returned with renewed energy and devotion to practice."

Dr. W. H. Frizell of Brookhaven serves as president, Dr. Felix J. Underwood of Jackson, secretary, and Dr. W. H. Anderson of Booneville, sponsor.

The following hold membership in the Club:

Stephen Archer Eggleston, Tchula; Giles Sanford Bryan, Amory; James Walton Lipscomb, Sr., Columbus; Walter Wesley Crawford, Hattiesburg; William Lee Little, Wesson; James Otty Riley, Quincy; William Henry Frizell, Brookhaven; Thomas Purser, McComb; Mose McCarley McMillan, Guntown; Lee Thomas Fox, Madison.

James Walter Lucas, Moorhead; Lewis Henry Hightower, Itta Bena; Benjamin Joseph Marshall, Whitfield; Benjamin Littleberry Byrd, Cleveland; George Harden Wood, Batesville; William Douglas Smith, Senatobia; John Robert Kittrell, Laurel; Joseph Dunbar Shields, Pine Ridge.

Edward Jones Mathis, Beaumont; George Irby Redditt, McCarley; James Henry Milton Pearce, Faulkner; John Thomas Longino, Jonestown; Carter Cimmie Parnell, Sledge; Joshua Rice Williams, Houston; William Alexander Johns, Corinth; Joseph W. Crumpton, Sturgis; William Butts Dickins, Greenwood; Charles Daniel Davis, Trebloc.

James David Biles, Sumner; Henry Reginald Fairfax, Brookhaven; James Henry Stennis, Mathiston; Tomas Lee Dobson, Leland; William Davis McCalip, Yazoo City; Caleb Wildy Bonney, Satartia; Walter Howard Scudder, Mayersville; Nash Wood Broyles, RFD Madison; Isaac Edwards, Canton; John Jefferson Landreth, Bruce; John Samuel Locke, Oxford.

Frank Gillespie Goodwin, Raymond, Thadeus Franklin Kilpatrick, Noxapater; William Evans Richards, Ocean Springs; James Patrick Synnott, Winona; Walter Eugene Clark, Philadelphia; William Alonzo Land, DeKalb; William Jefferson Anderson, Meridian; John Woodson Barksdale, Jackson; Rudolph Matas (honorary); Thomas Melville Dye, Clarksdale; Lancelot Longstreet Minor, Memphis, Tennessee; Seale Harris (honorary.)

Edward Clifton Parker, Gulfport; Dudley Watson Jones, Jackson; John Garner Backstrom, Tutwiler; Samuel Edward Izard, New Hebron; Donald Pollock Street, Vicksburg; John Summerfield Sanders, Leland; James Henry Green, Tupelo; Charley Consontine Pyle, Saltillo; Aaron Green Everett, Friar Point; Henry Leander Lewis, Liberty; George Baskerville, Greenwood; Thomas Wang Huey, Jackson; Melbourne Lafayette Batson, Jackson; Lucien Sydney Gaudet, Natchez; and Hugh Lawson McKinnon, Hattiesburg.

DR. McKINNON ADMITTED TO FIFTY-YEAR CLUB

Remarks made by Dr. Felix J. Underwood on the occasion of the presentation to Dr. Hugh Lawson McKinnon of Hattiesburg with the Fifty-Year Membership Certificate and Pin at the regular meeting of the South Mississippi Medical Society at Columbia, Mississippi, Thursday evening, September 13, 1951, (American Legion Hut):

On April 23, 1878 at Hattiesburg, Mississippi, Hugh Lawson McKinnon was born. He graduated from the Hattiesburg High School in 1898 and attended the University of the South at Sewanee, Tennessee. In 1901 he received his medical degree from the Memphis Hospital Medical College, now the University of Tennessee. Doctor McKinnon stood high in his class. He has done medical postgraduate work in several medical institutions. He passed the written examination of the Mississippi State Board of Health and obtained his license in October, 1901. I was looking over the old records only a few days ago and found the name of Hugh Lawson McKinnon up about the top of those who stood the examination for license to practice medicine that year. Doctor McKinnon, in addition to serving his second full term as a member of the State Board of Health, has had many other and well deserved honors. To enumerate a few, he has served as President of the Forrest County Medical Society, President of the South Mississippi Medical Society, President of the Hattiesburg Kiwanis Club, Superintendent of Ellisville State School, Physician to Mississippi Southern College, Local Surgeon, Gulf and Ship Island Railroad, Chief Surgeon, Mississippi Central Railroad, and Captain, Medical Corps, United States Army.

Notwithstanding the fact that he has passed three score and ten years, he is young in heart, works hard, accomplishes much and gets lots of fun out of doing it. He is a man's man if I ever saw one.

We test the genuineness of a coin by ringing it down upon some hard substance. Sooner or later the metal of our character will be thrown down upon the hard stone of adversity, and then all the world will know whether or not we are a genuine coin. Doctor McKinnon is considered by his best of friends and admirers as the genuine article.

I have enjoyed and profited by my association with him in the medical and public health work of this state over a number of years, and now after fifty years of fine service in private practice and public endeavor, all in a sincere effort to improve the health of his community and state, it is fitting that the State Medical Association, the South Mississippi Medical Society, and your humble servant have a part in honoring ourselves much more than we do Doctor McKinnon, I think, in presenting him this certificate of membership and beautiful fifty year golden lapel button from the Mississippi State Medical Association.

I know that you will proudly wear this insignia every day the rest of your life, and when you look at it, please remember that it is a small token of our great love and esteem for you.

ANNOUNCEMENT

William Hamilton Walker, M. D., announces the opening of his office for the practice of Urology and Urological Surgery at 815 Medical Arts Building, Memphis, Tennessee.

Edwin J. Lipscomb, M. D., and Moore Moore, Jr., M.D., announce the association of Wendell L. Whittemore, M. D., in the practice of orthopaedic surgery. Methodist Hospital Doctors Building, Memphis, Tennessee, telephone 7-4024.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW
Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson

PEDIATRICS

CVRVBRAL BIRTH INJURY IN RETROSPECT. W. Dean Belnap, Charles F. McKhan and Claude S. Beck, Western Reserve University School of Medicine and the Babies and Children's Hospital, Cleveland, Ohio. J. Pediat. 37, 9-50.

A study of 419 children with mental retardation, convulsive disorders, or cerebral palsy, varying in age from 8 months to 14 years, was carried out, seeking to determine the incidence of birth injuries as a cause of late cerebral disorders. This study was prompted by the need for information concerning the etiology of these problems in selecting patients for carotid jugular anastomosis. On theoretical grounds, less benefit should be expected from this operation on children with congenital cerebral defects or development abnormalities than on those children whose brains were entirely normal up to the time of injury from trauma, anoxia, or infection.

The consensus has been that most of the serious childhood cerebral abnormalities are the result of heredity or of intra-uterine developmental defects. Nevertheless, there has been a recurring viewpoint expressed that birth injury may be a major etiologic factor in these difficulties. The work of the present authors supports this latter view. Of their 419 cases, 52 per cent had a history strongly suggestive of birth injury, and another 14 per cent could be traced to postnatal injury. Only 3.2 per cent presented clear evidence of developmental defects. In 18.5 per cent not enough was known to support even a probable diagnosis. Pneumo-encephalograms revealed diffuse or localized cortical atrophy in 87 per cent of patients with a diagnosis of probable birth injury. Cortical atrophy was found in a similar percentage of those in whom the cause of the central nervous difficulty was unknown and whose history did not suggest birth injury, but who did have neonatal cyanosis. Among the group with unknown etiology who did not have neonatal cyanosis, some 56 per cent had cortical atrophy. Those with postnatal injury had a 93 per cent incidence of cortical atrophy. Severe or organic dysrhythmias were found in electro-encephalograms of nearly all patients with a known history of birth injury and in an unsuspectedly large number of other children in whom the history was obscure. The high rate of pneumo-encephalographic and electro-encephalographic alterations in many cases of obscure etiology and in cases clearly marked or presumptively resulting from birth injury suggests that even a larger percentage of lesions than indicated by birth history alone may have a probable origin in birth injury.

Careful psychometric evaluations were performed. It was felt that these could exclude the diagnosis of functional retardation. A close correlation was observed between the reduction in I. Q. and the severity of the injury as indicated by cortical and electro-encephalographic dysrhythmia.

Cerebral blood flow studies were performed with a few of the patients. The cerebral blood flow was decreased when gliosis might have followed cerebral injury, but was normal in children with known development defects as in mongolism.

Various causative and contributory factors in the production of birth injury are discussed. The following etiologic factors seemed most prevalent: marked sedation and-or "heavy" anesthesia in 17 per cent, prematurity in 15.5 per cent, a history of delaying the delivery by "holding back the head until the physician arrived" in 10 per cent. The data suggest that at least 1 of 5 cases of birth injury may be preventable.

COMMENTS:

Our impressions are very much the same as that of the authors of this article. For instance, heavy anesthesia, delaying delivery, and marked sedation are certainly potential sources of danger in these cases. The end results of this condition is what we all very much regret to see. We are hoping that the day will soon be here when we will have an institution where such cases as this can be properly treated and also when the known causes may be at least partially, if not entirely, eliminated.

MISSISSIPPI STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

MEDICAL LIBRARY

The library takes pleasure in making known the following new books added to the collection in recent months. Physicians throughout the state are welcome to avail themselves of the loan privileges of the Library (2 weeks for a book; 1 week or less for journals of recent date). The librarian will assemble selected references upon any subject upon request.

1. Kauffman, F.—THE DIAGNOSIS OF SALMONELLA TYPES. C.C. Thomas, 1950.
2. White, Wendell—PSYCHOLOGY IN LIVING. rev. ed., Macmillan, 1947.
3. Bicknell, F. & Prescott, F.—THE VITAMINS IN MEDICINE, 2d ed. William Heinemann, 1946.
4. Kahn, R. L.—AN INTRODUCTION TO UNIVERSAL SEROLOGIC REACTION IN HEALTH AND DISEASE. Commonwealth fd., 1951.
5. Medical Clinics of North America,
    - SYMPOSIUM OF DISEASES OF THE SKIN, v. 35 No. 2, March 1951.
    - SYMPOSIUM ON OBSTETRICS AND GYNECOLOGY, v. 35, No. 3, May 1951.
    - SYMPOSIUM ON DISEASES OF THE KIDNEY, v. 35, No. 4, July 1951.
    - SYMPOSIUM ON SPECIFIC METHODS OF TREATMENT, v. 35, No. 5, September 1951.
6. Mann, Marty—PRIMER ON ALCOHOLISM. Rinehart & Co., 1950.
7. Woodham-Smith, C.—FLORENCE NIGHTINGALE, 1820-1910. McGraw-Hill, 1951.
8. Hodges, M. B.—SOCIAL WORK YEAR BOOK, A Description of Organized Activities in Social Work and in Related Fields. 11th issue. Amer. Assn. of Social Workers, 1951.
9. Advisory Board for Medical Specialties—DIRECTORY OF MEDICAL SPECIALISTS. vol. 5
10. Kelly, E. C.—ENCYCLOPEDIA OF MEDICAL SOURCES. Williams & Wilkins, 1948.
11. National Conference of Social Work; Proceedings. Columbia University Press, 1950.
12. National Foundation for Infantile Paralysis: Collected Reprints of the Grantees, 1949.
13. Myers, J. A.—TUBERCULOSIS AMONG CHILDREN AND ADULTS, 3d ed. C. C. Thomas, 1951.
14. Ham, T. H., ed.—A SYLLABUS OF LABORATORY EXAMINATIONS IN CLINICAL DIAGNOSIS. Harvard University Press, 1950.
15. American Council on Education — HEALTH SERVICES IN STATE INSTITUTIONS OF HIGHER LEARNING IN MISSISSIPPI. Amer. Council on Education, 1950.
16. Alvarez, W. C.—THE NEUROSES, Diagnosis and Management of Functional Disorders and Minor Psychoses. Saunders, 1951.
17. U. S. Public Health Service Publication No. 15—INDUSTRIAL HEALTH AND MEDICAL PROGRAMS. Government Printing Office, 1950.
18. West Virginia—STANDARD CODE OF NECROPSY OR AUTOPSY PROCEDURE. W. Virginia Med. Assn., 1951.
19. Josiah Macy, Jr. foundation—FAMILY CENTERED MATERNITY AND INFANT CARE. Josiah Macy, Jr foundation, 1950.
20. Greenberg, L. A.—ANTIPYRINE, a Critical Bibliographic Review. Hillhouse Press, 1950.
21. Hopkins, E. S. and Elder, F. B.—THE PRACTICE OF SANITATION. Williams and Wilkins, 1951.
22. Dreikurs, R.—THE CHALLENGE OF MARRIAGE. Duell, Sloan and Pearce, 1948.
23. U. S. Federal Security Agency—CHRONIC ILLNESS, Digests of Selected References. Public Health Bibliography Series, No. 1. Government Printing Office, 1951.
24. Menninger, K. A.—A GUIDE TO PSYCHIATRIC BOOKS WITH SUGGESTED BASIC READING LIST. Grune and Stratton, 1950.
25. Cecil, R. L. and Loeb, R. F.—A TEXTBOOK OF MEDICINE. 8th ed. Saunders, 1951.
26. Veterans Administration—Conference on CORTISONE RESEARCH, A Symposium. Merck and Co., 1951.
27. West, Bessie B. and Wood, L.—FOOD SERVICE IN INSTITUTIONS. 2d ed. John Wiley, 1949.
28. American Dental Assn.—HORACE WELLS, DENTIST, Father of Surgical Anesthesia. Connecticut Printers, Inc., 1948.
29. Hanlon, J. J.—PRINCIPLES OF PUBLIC HEALTH ADMINISTRATION. C. V. Mosby, 1950.
30. Turner, C. E.—CHECK: Community Health Educator's Compendium of Knowledge. C. V. Mosby, 1951.
31. Gregg, D. E.—CORONARY CIRCULATION IN HEALTH AND DISEASE. Lea and Febiger, 1950.
32. National Tuberculosis Assn.—TUBERCULOSIS HOSPITAL AND SANATORIUM DIRECTORY. Nat. Tuberculosis Assn., 1951.
33. Sunderman, F. W. and Boerner, F.—NORMAL VALUES IN CLINICAL MEDICINE. Saunders, 1949.
34. American Med. Assn.—HANDBOOK OF NUTRITION. 2d ed., H. K. Lewis Co., 1951.
35. Wensley, Edith—THE COMMUNITY AND PUBLIC HEALTH NURSING. Macmillan, 1950.
36. Society for Research in Child Development—THE ADOLESCENT PERIOD: A PICTORIAL ATLAS, vol. 14, series 50, No. 2 Child Development Publications, 1951.
37. White, A., ed.—SYMPOSIUM ON STEROIDS IN EXPERIMENTAL AND CLINICAL PRACTICE. Blakiston Co., 1951.
38. Zahl, P. A.—BLINDNESS, Modern Approaches to the Unseen Environment. Princeton University, 1950.
39. Gillman, J. and Gillman, T.—PERSPECTIVES IN HUMAN MALNUTRITION. Grune & Stratton, 1951.
40. Greenhill, J. P.—PRINCIPLES AND PRACTICE OF OBSTETRICS. 10th ed. Saunders, 1951.
41. Veterans Administration—Transactions of 10th Conference on CHEMOTHERAPY OF TUBERCULOSIS (Streptomycin conference). V. A., 1951.
42. Cohn, A. E. & Lingg, C.—THE BURDEN OF DISEASES IN THE UNITED STATES. Oxford University Press, 1950.
43. Sydow, P. F. & Kopel, H. M.—GROWTH, DEVELOPMENT AND HEALTH PROBLEMS IN DENTISTRY. Overbeck Co., 1948.
44. Cook, D.—ULCER, Primary Cause, Diagnosis, Treatment, Prevention. Medical Center Foundation, 1946.

45. Burlington, R.—THE ODYSSEY OF MODERN DRUG RESEARCH. Upjohn Co., 1951.
46. National Heart Institute—Proceedings of first conference on ELECTROKYMOGRAPHY, May 25-26, 1950. Government Printing Office, 1951.
47. Gordon, E. E.—MULTIPLE SCLEROSIS, Application of Rehabilitation Techniques. National Multiple Sclerosis Society, 1951.
48. Patterson, R. S. and Roberts, B. J.—COMMUNITY HEALTH EDUCATION IN ACTION. C. V. Mosby, 1951.
49. Jennings, Helen H.—SOCIOMETRY IN GROUP RELATIONS, A Work Guide for Teachers. American Council of Education, 1948.
50. Dyer, Helen M.—AN INDEX OF TUMOR CHEMOTHERAPY. National Cancer Institute. 1949.
51. American Medical Assn.—QUARTERLY CUMULATIVE INDEX MEDICUS. Vol. 47, Jan.-June 1950. American Med. Assn., 1951.
52. U. S. Public Health Service—IMMUNIZATION INFORMATION FOR INTERNATIONAL TRAVEL. FSA, Public Health Service, May 1951.

Woman's Auxiliary

OFFICERS

President	Mrs. George W. Owen Jackson
President-Elect	Mrs. Richard Clark Hattiesburg
First Vice-President	Mrs. W. H. Anderson Booneville
Second Vice-President	Mrs. Willard Waldron Jackson
Third Vice-President	Mrs. I. C. Huggins Jackson
Recording Secretary	Mrs. C. C. Hightower Hattiesburg
Treasurer	Mrs. J. D. Simmons Cleveland
Parliamentarian	Mrs. V. B. Philpot Holly Springs
Corresponding Secretary	Mrs. P. R. Greaves Jackson

TWO MISSISSIPPIANS ELECTED TO SOUTHERN

Two Mississippi auxiliary members were elected to the Auxiliary to the Southern Medical Association executive board at the annual meeting held in Dallas, Texas, November 6-7.

Mrs. Stanley A. Hill of Corinth was elevated to the position of first vice-president, and Mrs. Harvey F. Garrison, Sr., of Jackson returned to her post as historian. Mrs. Garrison is also a past-president of the organization and has consistently made her contribution through the years of its existence.

DELTA MEDICAL AUXILIARY

The Delta Medical Auxiliary met in the home of Dr. and Mrs. Charles Berry Oct. 17 to elect Mrs. W. A. James, of Midnight, Miss., president. The Washington County Medical Auxiliary was hostess.

To serve with Mrs. James were Mrs. W. D. Fitzgerald of Cleveland, Miss., secretary and treasurer, and county vice presidents, Mrs. N. A. Bologna of Washington County, Mrs. A. C. Kembriel of Sunflower County, Mrs. J. C. Russell of Bolivar County, Mrs. T. J. Bostick of Humphreys County and Mrs. Howard Melton of Leflore County.

SUBSCRIBE YOURSELF!

Mr. S. L. Bailey, our Today's Health chairman, is urging us to help make Mississippi first in the Today's Health contest. What better way to make a start than to make your Auxiliary 100 per cent!

The subscription contest began the first of September and will close the thirty first of January. On all subscriptions sold at the fall subscription price of $3.00 for one year, the Auxiliary is privileged to retain $1.50 as a commission. All doctors, doctor's wives and dentists get a one-year subscription for $1.50. Why not give two or three subscriptions as Christmas presents?

One of the major purposes of the American Medical Association is health education of the layman through the promotion of Today's Health.

NEW AUXILIARY ORGANIZED

On October 24 Mrs. H. C. Ricks accompanied the state president, Mrs. George Owen to Carthage to meet with the doctors' wives of Leake County for the purpose of organizing a county unit of the Central Medical Society. After an encouraging display of interest and enthusiasm for the work, Mrs. F. L. Brantley of Madden was elected president, Mrs. H. B. Dearman of Carthage, vice-president, and Mrs. W. M. Wood of Carthage, secretary-treasurer. Mrs. B. R. Wilson of Carthage will serve as publicity chairman, and Mrs. K. P. Wood of Lena, will head the constitution committee.

EXECUTIVE BOARD TO MEET

Mrs. George W. Owen, state president, announces that the annual fall executive board luncheon meeting will be held in Jackson on November 29. Members will receive notice from the president.

Antabuse Therapy in Alcoholism

James A. Wallace, M. D.†
Memphis, Tennessee

In 1948 Hald, Jacobsen, and Larsen[1] published a report on the treatment of alcoholism with tetraethylthiuram disulfide (antabuse). This report and later publication by these Danish physicians have stimulated research with antabuse in the United States. Various investigators[2-4] have described their clinical experience with the new drug. The findings of other investigators indicate that certain complications may result from the use of antabuse. Bennett et al[5] describe psychotic reactions in patients treated with antabuse. Jones[6] and Stecker[7] gave detailed case reports of deaths from the use of antabuse. Macklin et al report definite changes in the electrocardiogram during the antabuse-alcohol test reactions. A significant editorial in the Journal of the American Medical Association[9] in 1950 stated; "It is apparent that treatment of alcoholism with antabuse is far from being free from danger. It should be carried out only in the hospital with small doses of both the drug and alcohol and with all the facilities at hand for emergency resuscitation. The patient should be carefully observed for a number of hours after the acute reaction".

The treatment should be administered only to volunteer patients who are sincere in their desire to give up the use of alcohol.

Thorough physical and psychiatric examinations should be given prior to treatment. Routine laboratory studies and certain special tests should be done on each patient. This type of therapy should be given only to those patients who are in good physical condition.

The patient should abstain from all alcoholic beverages for at least seven days prior to the administration of the antabuse tablets. Glud[10] recommends the following dosage schedule:

First day	2 grams
Second day	1.5 grams
Third day	1 gram
Fourth to fifth days	0.75 gram daily

On the fourth and eighth days the patient is given a test reaction with alcohol. Ten to 15 cc. of whiskey (or the equivalent of other alcoholic beverages) is administered every fifteen minutes until a total 30 to 40 cc. of whiskey has been given. Careful check should be made of blood pressure and pulse at frequent intervals. The most frequent findings during the antabuse-alcohol test reaction are first a marked flushing of the face and a feeling of face warmth. Later there is marked increase in the pulse rate, fall in blood pressure, and usually dyspnea. The antabuse-alcohol reaction has been attributed to the increased production of acetaldehyde.

After the test treatment, the patient is put on a maintenance dose of antabuse which varies from 0.125 gram to 0.5 gram daily depending on the individual's reaction to the drug. The most frequently reported side effect of the drug is fatigue which may last for several weeks but eventually disappears. Other less frequent side effects are headache and vertigo, gastrointestinal disturbances, and very rarely a mild skin rash. It is essential that the patient return at regular intervals for psychotherapy.

The author has treated a total of thirty alcoholics with antabuse at a private psychiatric hospital during the past fourteen months. Glud's suggestions have been followed as closely as possible and there have been no complications except for a very marked fall in blood pressure in four cases. The majority of these patients have received definite benefit from antabuse as an adjunct to psychotherapy.

The experience with these patients has indicated the importance of the proper selection of patients for antabuse therapy. Two case reports are given to illustrate this particular point. The case that follows of E.T. shows the results of treatment in a patient who is sincere in his desire to obtain from alcohol.

E. T., a forty-three-year-old man, had been drinking to excess for a period of ten years. His longest period of total abstinence had been two weeks. He drank almost daily while in the army but stated he had never been in any trouble because of it. After four years of army service, he went to work in an industrial plant as foreman. In spite of his excessive drinking, he had missed only a few days from work and was a fairly good provider for his family. He generally became very intoxicated on the week-ends and had shown a tendency to mistreat his wife and children. He had a

UNIVERSITY OF MARYLAND
LIBRARY
Founded 1813

---

† From the Wallace Sanitarium, Memphis, Tenn.

poor appetite and lost weight. He frequently used whiskey as a treatment for his insomnia. A few days prior to the start of antabuse treatment, he had become very drunk, struck his wife, and she had called the police to quiet him. Following this episode the patient voluntarily requested treatment with antabuse. He has been on the drug for the past twelve months and has used no alcoholic beverages. He has an excellent appetite, has gained weight, and sleeps well. Antabuse has had a definite sedative effect on this particular patient. He has been seen at regular intervals and has cooperated well in the psychotherapy. Although he has been on the antabuse tablets for twelve months he has had no complaints of any kind. He states that he feels better mentally and physically than he has in many years.

The following case concerns a patient with a life-long history of psychopathic traits. H. S., a fifty-five-year-old man, had a history of the excessive use of alcohol since the age of eighteen. He was the second of five children and as he stated, was "the black sheep of the family." He had done poorly in school and had had innumerable jobs. Recently a relative had offered him work on condition that he discontinued his drinking. He had excellent alcohol antabuse test reactions and was put on a maintenance dose of the drug. After a few weeks he admitted he had taken the tablets irregularly. He was negligent in keeping his appointments for psychotherapy and insisted that he was all right. Approximately four months after the start of antabuse therapy this patient became acutely intoxicated two days before Christmas. He stated that he felt proud that he had remained free of alcohol for the longest period in his life but discontinued the tablets in order to get drunk Christmas which was his usual custom.

A brief review of a small part of the literature on antabuse has been given and the technique of the treatment outlined. Two case histories of success and failure in treatment have been given. Antabuse is not a "cure" for alcoholism as had been stated in the lay press and should not be used indiscriminately. Antabuse is a valuable adjunct in the psychiatric treatment of alcoholism. Proper personality evaluation of the patient and frequent psychotherapeutic interviews are of paramount importance. This treatment is of definite value for that small group of alcoholics who sincerely want help and what is more important, are willing to help themselves.

BIBLIOGRAPHY

1) Hald, J., Jacobsen, E., and Larsen, V.: The Sensitizing Effect of Tetraethylthiuramidisulphide (Antabuse) to Ethyl Alcohol. Acta pharmacol. et toxicol., 4:285, 1948.

2) Barrera, S. E., Osinski, W. A., and Davidoff, E.: The Use of Antabuse (Tetraethylthiuramidisulphide) in Chronic Alcoholics. Am. J. Psychiat., 107:8, July, 1950.

3) Bennett, A. E., McKeever, L. G., and Turk, R. E.; Experiences with Antabuse Treatment of Alcoholism in a General Hospital. J, Nerv. and Mental Dis. 112:393. Nov. 1950.

4) Child, G. P., Osinski, Y. A., Bennett, R. E., and Davidoff, E.: Therapeutic Results and Clinical Manifestations Following the Use of Tetraethylthiuram Disulfide (Antabuse) Am. J. Psychiat., 107:774, April. 1951.

5) Bennett, A. E., McKeever, L., and Turk, R.: Psychotic Reactions During Tetraethylthiuram Disulfide (Antabuse) Therapy. J. A. M. A., 145:483, Feb. 17, 1951.

6) Jones, R. O.: Death following the ingestion of Alcohol in an Antabuse Treated Patient. Canad. M. A. J., 60:609, 1949.

7) Steckler, P., and Harris, L.,: A Preliminary Report on Antabuse Therapy for Alcoholism. Psychiat. Quart., 25:91 Jan., 1951.

8) Macklin, E., Sokolow, M., Siman, A., and Schottstaedt, W.: Cardiovascular Complications of Tetraethylthiuramdisulfide (Antabuse) Treatment of Alcoholism. J. A. M. A.. 146:1377, Aug. 11, 1951,

9) Editorial: Treatment of Alcoholism with Tetraethylthiuramdisulphide. J. A. M. A., 142:420, 1950.

10) Glud, E.,: The Treatment of Alcoholic Patients in Denmark with 'Antabuse" with Suggestions for its Trial in the United States. Quart. J. Stud. Alc., 10:185, Sept., 1949.

SCHOOL OF CYTOLOGY

The Cancer Cytology Center of the Dade County Cancer Institute, an affiliate of the Medical Research Foundation of Dade County in Miami, Florida, has announced its first one-week seminar for physicians to be held at the Institute from January 14 to 19 inclusive. The lecture courses are scheduled from 9 a. m. to 5 p. m. daily during this period.

Interested physicians should direct their inquiries regarding qualifications, registration, fees and other details to the Director of the Dade County Cancer Institute at 1155 North West 14th Street, Miami, Florida.

Applications for registration, limited to 35 physicians, will be accepted through January 12th.

Watchman, What of the Night?

Francis M. Massie, M. D.
Lexington, Ky.

THE CRY goes up from the beleaguered city. "Watchman, what of the night"? A cry born of fear of the enemy and hope that day will soon bring good news and light. Somehow in the wholesome light of day, "these thick-coming fancies that keep us from our rest" seem to vanish and real dangers seem less dreadful.

In the fight against cancer those of us who are watchmen, you and I, must sound warnings of the attacking enemy. We must also report the progress of the night.

Our first weapon in this long struggle against the powers of darkness is **light**. The public must have the help of all the light we can bring to the whole problem as well as to each individual sufferer.

Many of us remember a half-century ago when tuberculosis was considered a disgrace and no one would admit that someone in the family had tuberculosis. Why was this effort at secrecy? Why this feeling of shame? Because there was not enough light. The correct diagnosis was made only on the symptoms and signs of far advanced disease. Any victim lucky enough to have a doctor who by his special training and interest could make an early diagnosis and who was wise enough to follow his doctor's advice and got well, he, in the opinion of all the friends and neighbors, just never had tuberculosis. Why shouldn't they be afraid when the only people known by them to have consumption all died? No one in his right mind went around saying, "my brother or wife has tuberculosis". Still less did they say "my wife or husband **had** tuberculosis and is now **cured**", because he would have been taken for a fool or a liar. But as the light grew brighter doctors learned to find the disease in its early stages when rest, food and fresh air could cure. Surgery helped further by applying rest to the affected area and by removing this area in carefully selected instances, and now chemotherapy is opening up a direct attack on the tubercle bacillus. Much of the dread is gone because the public as well as the doctors know more about the disease and because so many people now get well. Nobody minds saying now "I had tuberculosis five years ago". One of my colleagues, a very hard-working internist, spent eighteen months as a patient in a TB sanatorium and he is as healthy as any of us, probably more so. Certainly he knows how to take care of himself better because he has had the light and discipline one gets in a sanatorium.

To arrive at this hopeful and intelligent attitude toward tuberculosis there had to be many long years of patient observation and courage by pioneer doctors and patients. We had to get all the information to the people, and it has cost many thousands of lives over the years and still tuberculosis is not whipped.

Ten years ago we in our knowledge of cancer and the public in their lack of information were just about where doctors and the public were at the turn of the century in their fight against tuberculosis.

In our zeal for light and truth how much should we tell the patient in whom we have found cancer? This may seem like a rambling digression, but I think it is wholly relevant to the question under discussion. We **must** bring cancer out from the dark corner, we **must** show that people **can** and do get well from it. The one most encouraging fact doctors can point to is the patient who is willing to say, "Yes, I had cancer ten years ago". To do this they must be told. There are many men who have to know the truth in order to make arrangements and business decisions. We must build our lives on the basis of what we **know**, not on what is concealed from us. And then suppose you ask me not to tell your father that he has cancer. He asks me the question and I evade and finally tell him a lie. Ten years later you come to me alarmed about yourself; you are almost certain that you, too, have cancer, and I, after a suitable period of study, tell you that you have no cancer. Can you be sure that I have not told your wife (or husband) just the opposite in the next room? No, we are morally bound to tell the truth.

Part of the appalling fear of cancer arises from the fact that the public hears only about the ones that die. Too few of the cured go around telling friends and neighbors that they **are** cured. We, the doctors, see many of them, but our lips are sealed about our patients.

"The thing that numbs the heart is this: That men cannot devise some scheme of life to banish fear", but one scheme we **can** use is to tell people the truth. Now is not the time and place to detail the many and varied ways there are of telling the truth to a cancer patient but it can and should be done in a way which seems best for that individual. Not one in the thirty years or more I have been in this fight has chosen what he thought was an easy way out of life when he knew he had cancer. When gently told the patient changes his approach to living, adapts himself and takes much of the responsibility instead of leaving it all on the immediate family. The way in which some people react to the news is heartening to the whole community. It fills us with pride to walk with them back to health or their memory is a constant lift to our hearts. Life for me as for all who knew them is richer and sweeter because of the valiant approach to death made by two of my dear friends. Whose courage is not kindled, whose faith in the worth and dignity of life is not renewed by the example of friends who love life but who know how to leave it? Who "ever with a frolic welcome took the thunder and sunshine". One of the great moments in my life came one evening when a member of my family was facing death from a type of cancer from which no one recovers. He knew this end could not be far away and when I asked him how he felt he thought my question was how did he feel about the future. His answer was in the words of one of Shakespeare's minor characters, "I care not; a man can die but once. We owe God a death, and let it go which way it will, he that dies this year is quit for the next".

What are the facts about cancer from which we can take courage? In the past ten years the American Cancer Society and the Women's Field Army have made the people in this country cancer-conscious and cancer-wise. Too much so, some thoughtful doctors claim. This fear, bad as it is, is a small price to pay for the lives saved by the work of this organization. What vital statistics have we to show for our work?

Quoting from the Statistical Bulletin — Metropolitan Life Insurance Company. V, 30, No. 3, March '49:

The atmosphere of pessimism and despair which has long pervaded the cancer problem is gradually lifted, as progress is being made in the control of the disease. Evidence of the recent improvement in cancer mortality is available from the experience among the many millions of Metropolitan Industrial policyholders. In the past decade, the age-adjusted death rate from the disease among insured white females at ages 1 to 74 has declined 11 per cent — from 87.7 per 100,000 in 1936-1938, to 78.3 in 1946-1948. Within the age range from 25 to 74 years, where the death toll from cancer advances sharply with age, every period of life showed a reduction, at ages 55 to 64, the drop was as much as 15 per cent. Among white men, the mortality from cancer has remained relatively stable in the past decade, in contrast with the marked upward trend which was in evidence for many years prior. Were it not for the increasing number of cases now being recognized and certified as cancer when death occurs, the recorded death rate from the disease among men would undoubtedly show a downward trend.

That cancer is yielding ground is substantiated by the experience of physicians and surgeons, who report an ever-increasing proportion of their patients survive, generally without recurrence of the disease for five ,ten, and more years after treatment. Illustrative facts are provided by data from the Tumor Registry of the Connecticut Department of Health. The proportion of cases of microscopically proved cancer surviving at least one year after treatment increased from 42.4 per cent to 58.9 per cent between 1935 and 1945. Cases surviving at least five years after treatment rose from 22.1 per cent in 1935 to 33.5 per cent in 1941. It is clear that there has been a steady and consistent improvement in the results of treatment.

Equally encouraging are the facts with respect to five-year survivorship rates for cancer of various sites, as reported by the Connecticut Tumor Registry. For skin cancers, almost two thirds of those treated in 1941 have survived at least five years; for uterine cancer, the proportion is 60 per cent; for cancers of the cervix and of the breast more than 40 per cent; and even stomach cancers show a five-year survivor rate at 11 per cent. For each of these sites, however, the figures are decidedly better than they were for patients treated in 1935.

The progress in cancer control results in part from earlier diagnosis and treatment.

Thanks to the intensified campaign to educate the public, the proportion of early cases among those hospitalized for cancer has been steadily increasing. In Vermont, for example, the proportion of cases coming for treatment early in the course of the disease rose from about 20 per cent in 1937 to almost 60 per cent a decade later.

Similar encouraging reports come from virtually every part of the country. In Memorial Hospital, in New York, there was no delay in treatment in almost 30 per cent of the cases in 1946, as contrasted with less than 20 per cent for cases treated in the period 1923 to 1938. Massachusetts data show that the average time elapsed between first symptom and visit to the physican dropped from 6½ months in 1927 to a little more than three months in 1945; the average time elapsed between first visit to the physician and visit to the clinic decreased from 5½ months in 1927 to less than three months in 1945. The proportion seeking medical consultation within one month of first symptoms increased by more than half. It is noteworthy that the chief reason for delay in treatment was "waiting for hospitalization". Fear and negligence are no longer major reasons for delay.

The gains against cancer reflect in part the beneficial effect or increased facilities for diagnosing and treating the disease. As a result of the interest of state and local government, and of the support from the federal government by grants-in-aid, more and more detection and treatment centers have become available. A federal survey shows that as of the beginning of 1948 there were in the United States 153 cancer detection centers, 84 diagnostic clinics, and 483 cancer clinics. In addition there were 16 special cancer hospitals with a total capacity of 1,724 beds. In recent years, the number of centers where people can receive advice and treatment has been increasing by leaps and bounds. It is, of course, true that the number is still far too few. These centers will have to be greatly increased in the developing campaign to control cancer; but much has already been accomplished.

Cancer control is now an accepted function of state and local health services, whereas not too many years ago there was little realization that cancer is a public health problem. As recently as 1946, only 11 state health departments provided cancer consultation services; in 1948 there were three times as many. Public funds are also being used to improve the cancer curriculum in medical and dental schools. No less than 40 of the country's medical schools and 12 of its dental schools are receiving support for this purpose.

One of the most hopeful signs in the cancer picture is the emphasis being placed on the need for basic research on a large scale and the financial support being given such work. In 1948, funds earmarked for research accounted for more than one half of the $14,000,000 appropriated for the various activities administered through the National Cancer Institute. Research grants to nonfederal laboratories totaled more than $4,800,000, with almost $3,000,000 in addition being spent for research within the Institute itself. These research grants, moreover, are coordinated under the direction of the National Research Council with the grants made by the American Cancer Society and other organizations.

The outlook for the solution of the cancer problem is hopeful. Increased funds are being made available for research and medical services, and a growing body of skilled workers in the field are extending the frontiers of our knowledge with respect to the disease. The use of nuclear energy offers many possibilities. But until a solution is ultimately found, further progress in cancer control depends, to a very considerable degree, on the increasing success of the educational campaign to bring patients for diagnosis and treatment early in the course of the disease, and on the provision of additional facilities and more skilled care for those who seek treatment. (end of quoting)

The attack, then, on cancer is being successful. We are fighting to gain "Heartbreak Ridge". Our line of approach has been through education of the public and education of the doctor. The old medical phrases "never trouble it unless it troubles you" and the equally destructive "Its just the change of life" have killed many people by delay and we as doctors have been responsible.

Our principle agents in the treatment of cancer so far have been destructive, surgery, radiation and heat. It is hopeful that we are now directing our attention toward prevention. The careful treatment of non malignant ulcers, the study of the relation of bad teeth and tobacco to cancer of the mouth, tongue and lungs, the effect of nursing or not nursing the newborn to cancer of the breast, the effect of clothes and sunlight in relation to skin cancers and many similar questions are being studied.

We are now breaking better than even in our fight but if we relax the factors against us wont. Any agent that increases life expectancy increases the cancer rate. The average age is increasing every decade, that is, more people are living to the age when cancer is more frequent. The lowering of infant death rates increases eventually the number of people dying from cancer. So with penicillin and all the other antibiotics present and future — these will all increase the cancer death rate. For if there are 100,000 people in this country saved every year by the antibiotics then several thousand of these will eventually die from cancer instead of the disease from which the antibiotics have saved them. Whether or not cancer is biologically increasing is pure speculation but it is likely that it is. All of this means that we can't relax for an instant.

The problem will not be solved until all of the factors which cause cancer are known and ways devised to prevent the action of these factors. This will take us right down to the origin of life itself.

Let us take for example the phenomenon of "granulation tissue." Those of us who are not doctors know this as "proud flesh". As soon as a wound is made the living tissue, the microscopic cells, or units of tissue, begin to multiply by the millions. They multiply until the wound is completely filled with them. When there are enough to fill the wound to make healing satisfactory they stop multiplying. Why? We don't know. Why do they begin to multiply so rapidly, to repair the injury? We don't know. Why do they never get into the blood stream or tissue juice stream (lymphatics) and spread to distant parts of the body? We don't know. A peculiarity of this tissue is that only the trained pathologist can distinguish it under the microscope from rapidly growing cancer cell. The "proud flesh" eventually becomes what we know as scar. Proud flesh or granulation tissue is thus a "baby" scar. We do not yet understand what causes growth of normal cells and what factors control the growth. We do not know yet whether cancer is from elimination of these factors that control growth or whether it is from principle inherent in the cell making it different from normal cells from the start.

There are forms of life which are half way between living and non living matter. Some of these are known as the plant viruses. The tomato plant virus for example can be separated in crystals, put in a bottle on the shelf, where it will stay unchanged just like any other crystals — such as sodium chloride, magnesium sulphate. When these tomato virus crystals are placed again on the plant they begin to multiply rapidly and must be classed as living matter.

"*Yes, we certainly have a transitional step between living and non-living matter, and when perhaps in no far distant future some alerted biochemist is able to synthesize a virus molecule from ordinary chemical elements, he will be justified in exclaiming! 'I have just put the breath of life into a piece of dead matter!' " When we can do this we will just begin to solve the complex problem of cancer.

Meantime we must continue to fight!

---

*Ganon, One, Two, Three Infinity, The Viking Press, N. Y., 1947, p 266.

STUDENTS EXPOSED TO SOCIALISTIC TEACHINGS

In 1948, Purdue University polled 10,000 high school students and one of the questions asked was: "Should or should not our government establish a permanent system of providing medical services for all?" Amazingly, 80% of the high school students answered in the affirmative.

County societies are urged to offer prizes for the best essay written and submitted for the Association of American Physicians and Surgeons contest which offers $1000 for top prize. County winners are then eligible for state and national contests.

Enterobius Vermicularis in the Human Uterus*

REPORT OF A CASE

J. P. Fatheree, M. D., F.A.C.S.
Laurel, Mississippi

G. M. Carrera, M.D., and Paul C. Beaver, Ph.D.,
New Orleans, Louisiana

OXYURIASIS is commonly regarded as a pediatric subject. However, it is also a subject appropriate for discussion here because, as will be presented later, the pinworm occasionally invades the female genital tract where it may produce important pathology.

As is well known, the normal habitat of the pinworm, **Enterobius vermicularis**, is the colon. So far as is known, the worms in all stages of development live in the lumen, and while they are mostly in contact with the mucosa and possibly may sometimes attach to it, there is no evidence that they are able to invade normal bowel tissue. After maturity is reached the gravid female migrates to the peripheral region and deposits at once her entire store of ten to fifteen thousand eggs. The eggs are ineffective within a few hours, and if ingested, the resultant gravid females will begin outward migration at the anus in about one month.

As revealed by the newer methods of diagnosis[1] pinworm infection is prevalent in most parts of the world[2]. It is more common in children than in adults and is more common in women than in men. It is the usual finding in mothers of infected children. Possibly it is less prevalent in tropical than in cooler climates. Stoll[3] found a much lower incidence among Guamanian children than was found by Hitchcock[4] among Esquimos. Racial factors may play a part in the rate of infection among different population groups, but types of clothing and housing, bathing habits and other hygienic factors probably are of greatest importance. It is well established that pinworm infection among negroes is relatively low in the United States[1,5]. Thus far an epidemiological factor that might account for this race difference has not been identified.

The various ways by which pinworm infections are contracted have been extensively studied by Schoffner and Swellengrebel[6,7]. They describe four distinct modes of infection, one or two of which may have special gynecological significance. The four methods referred to are: 1) anus-to-fingers-to-mouth transfer of infective eggs. Recalling that each female produces ten to fifteen thousand eggs, and that several gravid worms often simultaneously are depositing in sticky masses their total egg production, it is not difficult to account for the establishment of massive infections in individuals who already are infected. 2) A second mode of infection results from taking eggs indirectly from the hands, clothing or articles contaminated by others, as would often be the case with mothers of infected children. 3) The third method of transfer of eggs is by means of airborne dust. Attached to fibers from bed linens, night garments and underclothing, infective eggs are suspended in the air and reach the intestine by being swallowed in mucus from the respiratory tract. 4) The fourth type of infection was recently demonstrated by Schuffner and Swellengrebel[6,7] who gave it the name "retrofection". They found that eggs sometimes hatch in the moist mucus of the anus, and the larvae then establish new infection by retrograde migration directly into the rectum and upper colon. This type of infection was demonstrated on several volunteer subjects who permitted infective larvae to be placed into the outer part of the anal canal. While considering gynecological aspects of the pinworm infections, there is a temptation to speculate on whether newly hatched larvae may likewise migrate into the female genital tract.

It is not at all uncommon to find adult pinworms and their eggs in the vulva, and less frequently they are observed in the vagina. An excellent review of the literature dealing with the pathology of pinworm infection has been given recently by Symmers[8] who also reported three new cases of ectopic sites of infection. In their normal location in the bowel, pinworms seldom cause appreciable disturbance. Only after leaving this habitat by migration through the anal canal do they regularly cause evident discomfort and noteworthy pathology. Pruritus and mechanical irritation of the perineal, and vulval regions are familiar findings in individuals who either harbor heavy infections or are hypersensitive to the organism. These conditions are too common to merit further comment here. There is, however, an observation regarding the causes of the worms' migration from the bowel to the outside that may be of interest. Gravid females, it is assumed, come to the outside under biological urge to oviposit advantageously for the continuation of the species. Males and immature females, though less frequently, also are discovered actively migrating from the anal canal. The frequency of this occurrence is roughly shown by the results of routine examinations which, in addition to eggs, also sometimes reveal the presence of the worms themselves. In a recent study[1], for example, fourteen worms were found in this manner. Twelve were mature females, one was an immature female, and one was a male. Subsequently, males and immature females have been seen occasionally on scotch tape preparations. Moreover, shallow tapwater enemas often rinse from the lower bowel worms of both sexes in all stages of development, and formed stools may bear on the surface both mature and immature active worms. The cause of these unusual migrations into the lower rectum and to the outside is not known. In some instances, at least, they may be caused by fever or abnormal conditions in the bowel.

---

*Read before the Section of Obstetrics and Gynecology at the eighty-third annual session of the Mississippi State Medical Association, May 16, 1951, Biloxi, Miss.

Attention is called to the above observations because they possibly have some bearing on the question of why the pinworm after leaving the bowel fails to oviposit on the outside, electing instead to re-enter the body via the female genital tract. On the basis of numerous reports and judging from the fact that most of the cases were observed only incidental to the management of other conditions, it can be assumed that migration of pinworms into the vagina, uterus, tubes and peritoneal cavity frequently occurs. It cannot be assumed that the presence of pinworms in these locations always causes disturbance or appreciable pathology. In most of the reported cases, however, the condition called attention to itself in the form of conspicuous tumor-like lesions.

According to Symmers[8], lesions containing pinworms or their eggs have been recorded as having occurred in the cervix once, in the tubes four times, in the pelvic peritoneum eighteen times and in other locations of the peritoneal cavity five times. Four of the lesions found in the pelvic peritoneum were located on the serosal surface of the uterus and, as mentioned above, the cervix was the site of the lesion in one case. In none of the previously reported cases, however, was the uterus itself involved. The case to be reported here, apparently is the first observed instance of pinworm invasion of the myometrium via the endometrium.

REPORT OF CASE

R. G., white female, 26 years of age, was admitted to Southern Mississippi Charity Hospital on January 9, 1950, because of low back pain and severe menstrual cramps which apparently were increasing progressively during the past 6 months. Medical treatment had been unsuccessful. Her past medical and family history were non-contributory. Her social history revealed that she lived on a farm under less than average hygienic and economic conditions, and that her children were aged 6 years, 3 years and 6 months respectively. Physical and laboratory examinations revealed the following positive findings: a retroverted uterus with a first degree prolapse and an eroded cervix, and peripheral eosinophilia of 14 per cent with 7,500 W.B.C. per cu. mm. The stools were not examined.

At laparotomy the uterus was found retroverted and was otherwise of normal appearance, but upon palpation a fluctuant area was discovered in the posterior wall of the fundus. Total hysterectomy was performed.

Pathologic examination revealed a uterus of normal size and shape (8.5 x 6.0 x 4.0 cm.). The endometrium and myometrium measured 0.3 and 2.0 cm. in thickness respectively. On the posterior wall of the fundus the tissues felt softer than normal in an area about 3 cm. in diameter, but the serosa over it was of normal appearance. On section there was a central focus of necrosis measuring about 2 cm. across, surrounded by a zone of congestion corresponding in size to the palpable area of softness. Histologically the endometrium was found to be in the premenstrual phase, and deep in the myometrium, in the region corresponding to the lesion described above, there was an abscess containing an *Enterobius vermicularis* with numerous ova, and surrounded by purulent exudate for a distance of about 500 microns, beyond which there was granulation tissue and very dense eosinophilic infiltration. The eosinophilic infiltrate was not present near the parasite where true liquefaction necrosis was evident. Beyond this zone of granulation tissue surrounding the abscess, the eosinophilic zone gradually thinned out into the uninvolved myometrium. Serial sections through the lesion revealed partial degeneration of the body wall of the parasite at some levels, and well preserved portions at other levels. The identification of Enterobius was confirmed by the presence of numerous well preserved ova as well as by the presence of the prominent lateral folds which on cross section appear as "spines" on the body wall of the worm.

DISCUSSION

There is little to add to Symmers review of the ectopic lesions caused by **Enterobius vermicularis**. He does not mention the invasion of the human myometrium by this parasite and our case clearly shows that this possibility must be considered in dealing with gynecological problems of obscure etiology. The fact that our patient had 2 children in the age group when pinworm infection is common points to one or both of them as the source of her infection.

The most probable route of invasion in our case was by way of the vagina up into the endometrial cavity and thence into the uterine wall proper. Grossly, the serosa of the uterus was normal and this strengthens the view expressed above. The fact that the patient did not have fever is interesting as is the peripheral eosinophilia. The host tissue reaction around the partially degenerated worm was what should be expected, and is in complete accordance with the findings in ectopic lesions as reported in the literature.

The final outcome of the case, had she not been operated upon, is unpredictable. Three possibilities can be considered: 1) the lesion might have resolved spontaneously; 2) it might have ruptured into the endometrial cavity; and 3) it might have ruptured into the peritoneal cavity. In the evetn, surgical treatment appears to have been will indicated.

SUMMARY

A patient with obscure gynecological symptomatology which was diagnosed preoperatively as uterine retroversion and prolapse, was found at operation to have a 3 cm. area of softness in the posterior wall of the fundus. Hysterectomy was performed. Sections of the lesion revealed an abscess containing an Enterobius vermicularis filled with well preserved typical eggs and surrounded by a dense zone of eosinophilic infiltration.

REFERENCES

1. Beaver, P.: Methods of pinworm diagnosis, Am. J. Trop. Med., 2' (4): 577-587 (July) 1949.

2. Stoll, N. R.: This wormy world, J. Parasitol., 33 (1): 1-18 (February) 1947.

3. Stoll, N. R., Cheoweth, B. M. and Peck, J. L.: Low incidence of *Enterobius vermicularis* in natives of Guam, M. I., Puerto Rico J. Pub. Health and Trop. Med., 22 (3): 235-243 (March) 1947.

4. Hitchcock, Dorothy: Parasitological study on the esquimos in the Bethel area of Alaska, J. Parasitol., 36 (3): 232-234 (June) 1950.

5. Cram, Eloise: Studies on oxyuriasis. XXIV. Comparative findings in the white and negro races, Proc. Hel. Soc. Washington, 7 (1): 31-35 (January) 1940.

6. Schuffner, W. and Swellengrebel, N. H.: Retrofection in oxyuriasis. A newly discovered mode of infection with *Enterobius vermicularis*, J. Parasitol., 35 (2):138-146 (April) 1949.

7. Schuffner, W., Swellengrebel, N. H., and Bool, J.: Retrofection in oxyuriasis. Conclusions, J. Parasitol., 36 (4):391-393 (August) 1950.

8. Symmers, W. St. C.: Pathology of oxyuriasis with special reference to granulomas due to the presence of *Oxyuris vermicularis (Enterobius vermicularis)* and its ova in tissues, Arch. Path., 50 (4):475-516 (October) 1950.

Sphenoid Sinus Disease*

D. C. Montgomery, Jr., M. D.
Greenwood, Mississippi

THE IMPORTANCE of prompt recognition of sphenoid sinus disease has become increasingly apparent to the otolaryngologist in recent years. Dixon[1] in 1941 reported the autopsy findings on 1184 cases with clinical sinusitis, and in 22 per cent of these cases there was evidence of sphenoid disease. Although the sinus' anatomic location and its close proximity to many vulnerable and important structures has aroused well justified caution in its exploration, with this increasing recognition of the prevalence of sphenoid disease this sinus demands investigation to the same extent and in the same manner as the more accessible paranasal sinuses.

The sphenoid sinuses are separated from each other by a thin bony partition or septum which frequently deviates to one side or the other, producing one large and one small cavity. The capacity of the sphenoid has been found to vary from .05 cc. to 14 cc, (½ minim to ½ ounce). The floor is thick, but the remaining walls may be of tissue paper thickness, their average thickness being around 0.5 mm. When attempting irrigation of the sphenoid, as will be discussed later, it is well to remember that the sella turcica may be covered by a bone of parchment paper thickness.

---

*Read before the Section on Eye, Ear, Nose and Throat at the eighty-third annual session of the Mississippi State Medical Association, May 1951.

The ostium is practically always membranous, its bony circumference being considerably larger than its actual orifice. This membranous aperture, which empties into the sphenœthmoid recess, varies from pin-point size to an opening 8 mm in diameter, the average being about 3 mm.[2]

SYMPTOMS

Although the sphenoid is the most posterior and least accessible of the nasal accessory sinuses, for the same reasons it is the best protected from temperature changes, injury, or direct infection. Its lining membrane differs from that of other sinuses in thickness, blood supply, and glandular structure. The mucosa consists of thin ciliated columnar epithelium and is sparsely supplied with glands, and since it is well protected from the evaporating effects of air currents the sphenoid is not often the site of mucous stasis or polypoid changes.

It has been our experience that acute purulent infection of the sphenoid alone is uncommon, probably for the reasons listed above. Nevertheless, it does occur, and with greater frequency than generally supposed, although acute exacerbations of chronic infections are certainly more common. Symptomatically there is nothing to distinguish between the two. In fact, in many cases there is a reasonable doubt whether the attack is an exacerbation of a chronic infection or simply a reinfection of the same sinus. It would seem, therefore, that the symptomatology of sphenoiditis depends not so much upon the acuteness or chronicity of the disease, as it does upon the pneumatization pattern of the sinus and its relation to other structures. The symptoms may be divided on this basis into three general groups.

1. Headache. This is the single most consistent symptom of sphenoiditis, but there is nothing consistent about its character or location. It has been variously described as occipital, supra-frontal, frontal, and vertical. The pain may be located behind the eyes associated with a feeling of pressure. In rare cases it may be referred to the mouth near the upper part of the anterior tonsil pillar or the mastoid process. The pain may be dull, throbbing, sickening, stabbing, pounding, or burning. When an acute empyema is present there is usually a severe throbbing pain in the center of the head which is referred to the vertex, and the patient often walks with a peculiar shuffling gait to prevent jarring. One feature of the pain which is practically constant is its severity.

2. Nasal. These are symptoms which are due to the discharge, such as fullness of the ears, post-nasal drip, cough, sore throat, diminished smell, etc.

3. Symptoms which are due to the involvement of adjacent structures. Consideration of the infinite variation in the anatomy of the sphenoid and realization that its recesses may bring the diseased lining into contact with many vital structures explains the varied and puzzling clinical pictures which are often encountered. This group logically includes the symptoms arising from the complications of untreated sphenoiditis.

If the sinus pneumatizes the greater and lesser wings of the sphenoid bone, it comes into close relation with the ophthalmic, oculomotor, trochlear, abducens, frontal, lacrimal, and nasal nerves, as well as the cavernous sinus and the internal carotid artery. When the sinus extends into the great wing of the sphenoid the cavity may come into close approximation with the maxillary nerve, the mandibular nerve, and the vidian nerve. When the lesser wing and the anterior clinoid process is invaded the sinus is in intimate association with the optic nerve and chiasm and the pituitary gland. The cavity may be in close relation to the superomedian aspect of the orbit, or may be closely related to the sphenopalatine fossa and its contained sphenopalatine ganglion.

Disturbance of these adjacent structures may produce many and varied symptoms. Neuralgic pain over the distribution of a sensory nerve, or vidian and sphenopalatine neuralgia may result. As a consequence we may encounter a patient who complains of severe pain back of the eyeball which radiates to the temple, back of the ear to the occiput, and down the neck even into the shoulder, all due to an irritation of the vidian nerve in the floor of the sphenoid sinus. The introduction of cocaine into the sphenoid sinus will control the pain and clinch the diagnosis.

Various degrees of impaired vision due to scotomas caused by optic neuritis may appear, as well as extraocular muscle palsies. Meningismus, vertigo, tinnitus, and stiff neck may occur, or such generalized and vague symptoms as malaise, insomnia, and gastric disorders may be encountered. In untreated cases of acute purulent infections meningitis or cavernous sinus thrombosis may result. Kramer and Som[3] in 1940 demonstrated 50 cases of bacterial meningitis due to sphenoid infection, usually in conjunction with a sub-mucosal abscess.

Arndt[4] reported a case of bilateral retinal detachment due to an acute sphenoiditis, with reattachment after operation of the diseased sinus. Goldman[5] has reported cases of increased intra-cranial pressure with the accompanying symptoms of headache, vomiting, blurring of vision, diplopia, papilloedema, and signs of meningeal irritation. There was increased spinal fluid pressure and the fluid obtained was clear. He believes the increased pressure to be due to hypersecretion of excessive spinal fluid or to defective absorption, as a direct result of the toxic focus in the diseased sinus.

These and many other symptoms which occur from the involvement of structures adjacent to the sphenoid give some indication of the difficulty which may arise in the diagnosis of cases in which the clinical picture is not obviously associated with disease of the sinus itself.

EXAMINATION

1. Direct. In the normal nose only a small part of the face of the sphenoid is visible or even accessible. Anterior rhinoscopy is therefore of little or no value as a general rule. Examination of the oropharynx, however, may reveal some degree of pharyngeal injection and purulent discharge from the nasopharynx may be visible.

2. Nasal smear. Miller[6] has suggested the use of nasal smears in the diagnosis of sphenoid infection. The smear is made with an applicator bent to reach up behind the middle turbinate. The normal nasal cytology consists of epithelial cells and very occasional lymphocytes, eosinophiles, and neutrophiles. In cases of suspected chronic sinusitis where only a few pathologic cells are found in the smear, Miller suggests the use of nasal suction after shrinkage of the nasal mucosa to release any cells blocked in the sinus.

3. Nasopharyngoscope. In our hands the use of the nasopharyngoscope has been the simplest and most successful method of diagnosing sphenoid sinus disease. If purulent secretion is seen behind the posterior tip of the middle turbinate, on the posterior end of the middle turbinate, in the sphenoethmoid recess, or around the sphenoid ostium the diagnosis is definitely suggested. In some of the so-called chronic cases the scope may show enlarged blood vessels and polyp formation according to some authors[3].

4. X-ray. In our experience simple x-ray films of the sphenoid have been of questionable value as diagnostic aids. Nevertheless much has been written emphasizing the relative values of the various roentgenological views and techniques in the visualization of the sphenoid sinus. In general more satisfactory results can be obtained after the injection of a radiopaque substance for the purpose of demonstrating abnormal anatomical variations and the presence of abnormal pneumatization into the neighboring structures. A very thorough presentation of this technique was made by Peele and LeJeune in 1942[7].

The Rhese or oblique view is often used. The tip of the nose, the brim of the orbit, and the malar bone touch the film, while the rays enter the parietal region about 2 inches posterior and 1½ inches superior to the external auditory meatus. The object of this position is to project the sphenoids and posterior ethmoids through the orbit for the purpose of determining the degree of pneumatization of the optic canal, and is particularly useful in cases of retrobulbar and optic neuritis.

In the Pfeiffer position the patient's chin is placed forward over the film and the rays pass vertically through the head at a point approximately 2 cm. in front of the external auditory canal.

The lateral view determines the anterior-posterior extent of the sinus and demonstrates its relation to the pituitary fossa.

The Granger view is made at an angle of 107° in the anterior-posterior position.

The Hirtz or mentovertex position is probably the best for determining the relative size of the sinuses, the nature of the septum, the relation of the sphenoids to the posterior ethmoids, and in general, gives the most surgical information.

The Bowen technique is accomplished by placing the film on top of the head and passing the ray up from below.

Generally speaking, we have found the mentovertex and lateral views supplemented by the use of an opaque medium, to be sufficient in most cases. In connection with this subject, it might be well to mention that this procedure also provides us with information about the function of the cilia, the mucous blanket, and the sinus ostia, which may be determined indirectly from the speed of elimination of the opaque medium.

5. Diagnostic lavage. The diagnosis of sphenoiditis is often difficult as has been previously stated, and in some cases the diagnosis can only be established after irrigation of the sinus. It has been our experience that where disease of this sinus is suspected but cannot be demonstrated by the forementioned procedures, a diagnostic lavage is indicated.

In this connection the so-called sphenoid vacuum headache should be mentioned. Belchick[8] in 1940 described a group of cases with symptoms such as headache, vertigo, and malaise, while no disease could be found in the sphenoid or anywhere else. The headaches were intermittent and were not well localized. He found that these cases could be relieved by one of several procedures, such as removal of the middle turbinate, irrigation of the sphenoid, or removal of its anterior wall. Some cases responded well to simple shrinkage with cocaine or ephedrine.

Frequently in these cases of vacuum headache the ostium is found to be a slit rather than a well defined opening, and when a high nasal obstruction occurs and there is swelling of the mucosa of the sphenoethmoidal angle the ostium is closed. Several of our cases have responded well to submucous resection when this situation existed.

TREATMENT

The advent of chemotherapy and the antibiotics has led to increasing conservatism in the treatment of sinus infections. Today surgery is only occasionally necessary in the treatment of sphenoid disease. There is a great deal of conflicting opinion, however, as to the proper non-surgical treatment of sphenoiditis.

Conservative measures which have been suggested are the use of vitamins A and B, nasal shrinkage, nasal irrigations, suction irrigation, displacement by iodized oil or ephedrine, and measures to open up the posterior nares, such as partial resection or lateral fracture of the middle turbinate and submucous resection.

Proetz[9] adheres to the displacement principle with ¼% ephedrine sulphate. Antibiotics may be dissolved in the solution if desired. He warns against the use of cocaine for the purpose of shrinkage on the grounds that it inhibits normal ciliary activity.

There seems to have been some doubt in the past as to the advisability of attempting lavage through the normal opening of the sinus, as well as some doubt as to the degree of success with which this procedure may be carried out. Dixon[2] in a study of 1600 macerated skulls found the average diameter of the ostium to be approximately 5 mm, while the average diameter of the membranous ostium was only 3 mm. He concluded that in most cases the mucosa would be traumatized by an attempt to catheterize the normal opening. Nevertheless, he was successful in 70% of these cases. He attributes his failure in the remainder of these causes:

1 — a deflected septum
2 — ethmoseptal too sharp
3 — ostium abnormally placed

It is interesting to note that in no case is failure blamed on the size of the normal opening. Indirectly this lends support to our own conclusion that any ostium large enough to admit infection is large enough to permit catheterization. This observation is further borne out by the report of Canfield in 1938 who stated that he had been able to catheterize 90 per cent of normal sphenoid openings[10].

For all practical purposes, therefore, it may be stated that irrigation of a diseased sphenoid is possible when the middle turbinate or a deflection of the septum does not prevent the introduction of the cannula into its opening. When such an obstruction is present it may become necessary first to remove it by some surgical procedure. A malleable silver cannula is the instrument of choice for catheterization since its slightly bulbous tip measures only 1½ mm in diameter and the cannula itself may be bent to the desired curve to reach any opening.

Puncture of the anterior wall has been occasionally recommended by other writers in cases where the natural ostium is inaccessible. Tremble[11] advocates puncturing the wall with a trocar rather than attempting to insert a cannula into a small swollen ostium. Eadie[12] also recommends puncture with a trocar, followed by insertion of the cannula. In our experience puncture has not been found necessary, and certainly it is a procedure which entails more risk to the patient than simple catherization of the normal opening.

Any discussion of surgical procedures must necessarily be limited to generalities. Cases which require surgery are few in number, and consist largely of those patients who suffer from frequent and repeated exacerbations of chronic sphenoiditis. Although these individual attacks respond quickly to irrigation and the instillation of antibiotics, the frequency of their occurrence will eventually make surgery the treatment of choice.

There is also a very small group of cases in which there may be gross hyperplastic and polypoid disease, and operation is generally indicated when this occurs.

Finally in cases of optic neuritis, meningeal irritation, increased intracranial pressure, or similar serious complications, operation has been recommended. Bilchock[8] in referring to optic neuritis goes so far as to state that when the sphenoid sinus shows disease, or when no other cause can be found, optic neuritis should be an indication for sphenoidectomy. Even in these cases, however, it will be found that simple irrigation will often provide as quick a cure as more drastic measures.

When any surgical procedure is undertaken, one must remember the immediate proximity of these sinuses to certain vital structures, the injury of which could endanger the life of the patient. Sharp instruments and curets must be used with caution if at all. Frequently a very thin wall separates the posterior portion of the sinus from the basilar plexus of veins, the basilar artery, and the brain stem. There are many cases in which the optic nerve bulges into the sinus and less frequently the internal carotid artery. In one example given by Barnhill[13] the carotid was in intimate relation with both sinuses and the thickness of the bony wall separating the two was less than 1 mm. In such a case it is obvious that vigorous curettage of either sinus would endanger the vessel. It is also necessary to consider the course and position of the nasopalatine artery, which runs horizontally across the anterior wall of the sinus about on a level with the anterior portion of its floor. In cases where the ostium is low, the first bite of the cutting instrument could wound or sever this vessel.

The amount of surgery done may vary from a simple enlargement of the ostium to the complete removal of the anterior wall. Proetz[9] advises the creation of a narrow longitudinal opening close to the septum, rather than attempting to obliterate the face of the sinus. This is undoubtedly sound advice, except in those few cases with gross hyperplastic and polypoid disease which may require a more radical operation. In these cases it is obviously necessary to remove the posterior end of the middle turbinate and the posterior ethmoidal cells in order to reach and remove the pars ethmoidalis. Fortunately the mucosa in these cases, especially when polypoid, is often loosely attached and may be removed by dull dissection with minimum danger.[13]

REPORT OF CASES

Case No. 1—W. B., a 60-year-old man, was first seen a number of years ago with the complaint of severe pain in the center of his head radiating to the vertex. The pain had been practically constant for several weeks. Examination with the nasopharyngoscope revealed purulent exudate around the right sphenoid ostium. The left ostium was not seen.

Catheterization of the right ostium was performed and irrigation produced about a teaspoon of purulent material with subsequent increase in the severity of the headache for several hours, a not uncommon result. After three irrigations his headache was completely relieved. At the time of catheterization the ostium was found to be abnormally small, and subsequently the opening was enlarged with a small rasp.

It is interesting to note that at this time no evidence of a left ostium could be found, nor has such been discovered on any subsequent examination. A radiopaque x-ray reveals a large right sphenoid almost filling the body of the bone with no sign of a second cavity.

This patient has been subject to recurrent attacks of sphenoiditis, but has refused further operative procedures. He is quite familiar with the prodromal symptoms and returns for treatment before his headache becomes severe.

Case 2—L. C., a 45-year-old white woman, was seen with the complaint of severe pain over the left mastoid area radiating down the neck and into the shoulder. Her symptoms had begun about three years previously when she first noticed some discomfort in her neck and shoulder muscles on the left side. This became progressively worse until at the time of examination she was having difficulty in reclining in bed because of the severity of the pain. Previously she had been treated for cervical arthritis, neuritis, eye strain, and miscellaneous conditions. At times she also suffered from various degrees of vertigo. She stated that her post nasal drainage was marked on occasion.

Examination with the nasopharyngoscope revealed no abnormalities on the left side except an enlarged posterior tip of the middle turbinate. Irrigation of the left sphenoid produced no purulent material. The ostium was very constricted. Examination of the right side revealed some exudate around the sphenoid opening. Irrigation of the right sphenoid produced about a half teaspoon of pus.

After injection of lipiodol the x-ray of the right sphenoid showed a small sinus with a very definite thickening of the mucosa encroaching on the lumen of the sinus. The anterior walls of these sphenoids should be removed. After two treatments by irrigation and instillation of penicillin in both cavities there has been almost complete relief of symptoms for the first time in three years.

Case 3 — W. B., a 35 year old white farmer, was seen with the complaint of intermittent headaches of one year's duration. The pain was located in the left temple and over the left mastoid, radiating down the neck to the shoulder. The pain was usually severe and occurred around four o'clock in the morning waking up the patient. For the previous three or four months the pain had been present constantly.

Anterior rhinoscopy revealed a somewhat hypertrophied middle turbinate on the left. The nasoscope revealed the posterior tip of this turbinate to be hypertrophied and encroaching upon the sphenoethmoid recess. There was no evidence of infection around the sphenoid ostium. Radiopaque x-ray revealed a large sphenoid cavity on the left side with no signs of infection or inflammation.

After cocainizing the sphenoid ostium a cannula was introduced and the cavity was irrigated with normal saline. There was complete relief of pain in a few minutes time. At the present time, these treatments are being given intermittently, since the relief provided lasts only for a period of 2 or 3 days. The patient is reluctant to have any surgery done at this time, but it would seem that some surgical procedure will become necessary if a permanent cure is to be obtained.

SUMMARY

1. Emphasis has been placed upon the important anatomical relationships of the sphenoid sinus, particularly with the optic nerve and with the cavernous sinus and its contents. The symptomatology of sphenoiditis has been discussed primarily on the basis of these relationships.

2. The methods of examining the sphenoid sinus have been listed, and the use of the nasopharyngoscope has been recommended as the single most valuable diagnostic procedure. The various x-ray techniques with or without the use of radiopaque medium have been discussed, and the use of radiopaque medium is presented as a very useful procedure in the determination of abnormal pneumatization patterns of the sinus.

3. Catheterization of the normal opening of the sphenoid is possible in almost every case, and this is recommended as the treatment of choice in cases of sphenoiditis where surgery is not considered necessary. Conservative operation procedures are recommended when surgery is undertaken.

4. Three cases of sphenoid disease are reported. One of these is presented as a possible case of a single sphenoid sinus. Another is given as a typical example of vidian or sphenopalatine neuralgia of the type first described by Sluder. The third case presents an excellent clinical picture of a sphenoid vacuum headache.

BIBLIOGRAPHY

1. Dixon, F. W.: Practical Points in the Treatment of Sphenoiditis. Archives of Otolaryngology, 34: 117, July, 1941.
2. Dixon, F. W.: Catheterizing the Sphenoid. Archives of Otolaryngology, 30:994, December, 1939.
3. Kramer, R. and Som, M. L.: International Pathways of Infection from Disease of the Sphenoid and Ethmoid Sinuses. Archives of Otolaryngology, 32:744, October, 1940.
4. Arndt, E. W.: Infection of Sphenoidal Sinuses with Secondary Affection of the Eyes. British Journal of Ophthalmology, 25:324, July, 1941.
5. Goldman, I. B.: Sphenoiditic Hydrocephalus. Laryngoscope, Vol. LII, No. 2, p. 101, February, 1942.
6. Miller, A. R.: Cytologic Examination of Nasal Smears. Northwest Med, 44:242, August, 1945.
7. Peele, J. C. and LeJeune, F. E.: Roentgenography of the Sphenoid Sinus. Laryngoscope, Vol. LII, No. 7, July, 1942.
8. Bilchick, E. B.: Diseases of the Sphenoid Sinus. Archives of Otolaryngology, 32:1031, Dec., 1940.
9. Proetz, Arthur W.: The Sphenoid Sinus. British Medical Journal, p. 243, July 31, 1948.
10. Canfield, N.: Clinical Recognition and Treatment of Chronic Sphenoiditis. Kentucky M. J., 39:284, July, 1938.
11. Tremble, G. E.: The Sphenoid Sinus — A Safe and Simple Method of Irrigation. Archives of Otolaryngology, 35:755, May, 1942.
12. Eadie, C. M.: Sphenoidal Sinusitis in Adults. Med. Jour. of Australia, 2:11, July 2, 1949.
13. Barnhill, J. F.: Surgical Anatomy of the Head and Neck. Second Edition, The Williams and Wilkins Co., Baltimore, 1940.

DISCUSSION

Dr. R. H. McArthur (Jackson) —As Dr. Montgomery has pointed out, the anatomical relations of the sphenoid sinuses are so complex and variable and results in such a multiplicity of symptoms that differential diagnosis becomes a real problem. I must admit that in my hand cannulation of the sphenoid sinus has been a procedure fraught with difficulties and hence relegated to those cases in which it is a therapeutic necessity rather than a diagnostic tool. In those cases of suspected but not obvious sphenoid sinusitis I have found the instillation of radiopaque material by the Proetz displacement method to be a fairly satisfactory diagnostic measure. Again I must admit that the number of cases in which I have left it necessary is small. This latter statement brings to mind the fact that so many cases of acute suppurative pansinusitis are seen in which the sphenoid sinuses do not appear to be involved. I wonder whether this is due to the anatomical individuality of the sphenoids or to incomplete diagnostic investigation. It does seem apparent that if the latter is the case, recovery of the sphenoid disease usually occurs concomitantly with response of the anterior sinus group to the usual therapeutic measures whether these be purely medical or combined with antral irrigations, Proetz displacement, etc.

I notice that Dr. Montgomery does not discuss posterior rhinoscopy as a tool in his diagnostic armamentarium and feel that it should be emphasized since I personally gain more information by combining this latter method of examination with nasopharyngoscopic findings than by either one alone. The very helpful trick of using a soft palate retractor to enhance the value of posterior rhinoscopy in those patients with very active gag reflexes was suggested to me by Dr. LeJeune.

In reviewing six cases of suppurative ethmoid and frontal sinusitis with rupture into the orbit which were treated surgically by radical exenteration, I found the sphenoid to be grossly infected in only one case. Since the frontal and ethmoid suppuration had progressed in spite of the administration of the sulfonamides, penicillin, and in two cases the newer antibiotics, it would seem that again the anatomical and physiological characteristics of the sphenoid sinus renders it much less vulnerable to infection.

At the risk of seeming fractious which I sincerely do not intend to be, I would like to ask Dr. Montgomery if he might reconsider his diagnosis in case number 3 as he reported it. I wonder if this might not be a case of sphenopalatine or vidian neuralgia without sphenoid sinus involvement in which the relief of pain is due to the cocainization prior to irrigation rather than to the latter itself? If such were the case would not injection of the ganglion either by the intranasal or descending palatine canal route be simpler and more acceptable to the patient than sinus surgery?

In closing I would like to say that such well planned and presented papers as this one by Dr. Montgomery are the much needed stimulants which make me, and I believe others in the field of otolaryngology, stop, take stock and then take a renewed interest in our work.

What Is Organized Medicine?

J. Joel Montfort, M. D.
Batesville, Arkansas

THE COUNTY SOCIETY is a basic unit of organized medicine. It is through this unit that organized medicine must operate effectively, if the purpose of this society is to be attained. It is here the doctor-patient relationship can function; it is through this personal relationship with members of the community that we are able to enlighten and direct opinion regarding the great problems of public health and hygiene. It is at this level that we as physicians shall become more useful to the public in the prevention and management of disease, and in prolonging and adding comfort to life.

In the local county medical society we can promote friendly relations among physicians. Young fellow practitioners and competitors have the same hopes, ambitions and weaknesses as you. The better you become acquainted with these professional folk, the easier it will be for you to overlook their weakness, so similar to yours, and become aware of the good points of your fellow physicians.

What do we owe this society? Unfortunately the county medical society is unlike many organizations such as the lodge, the church, or the service club. Hospital appointments and insurance appointments are dependent upon society membership. Therefore, the idea of compulsion is present. If you are a member because of this compulsion, your membership will mean little to you. If this is the reason you are a member, you are not interested in the question — What do I owe this society? Certainly there are other objectives of being a physician than that of earning a living. These higher objectives can be best realized through organized effort, hence, you should be an active member of your society.

You should attend the meetings; you should keep yourself informed on the health problems in your community and you should accept responsibility in this society when offered.

The duties of physicians to the public may be defined as follows: first, it is our duty to advise and educate the public concerning public health. Are we meeting our challenge in this direction or are we turning over a large portion of this function to lay organizations? How many of our membership are willing to take the time to speak to lay groups and to inform them? If we do not do this we will lose our position of leadership in the bill of health and will be false to the ideals of our profession.

Secondly, the code of ethics suggests that we have an obligation to bear our full part in initiating and enforcing laws that advance the interest of humanity. Too often we are complacent until legislation attacks fundamentals of our practice and then we become vocal. Medicine has an obligation to be alert to the needs of public health, to be aggressive in promoting those legislative acts which will improve the health of the community. We have a duty as physicians to be intelligent citizens interested in our laws and we have a duty in the field of health to be aggressive in our sponsorship of legislation which will aid our public to better health. We shall have to lend constructive help rather than criticism in the problems such as are presented by food handlers laws, by the regulations for the control of venereal disease and the application of preventive measures.

Thirdly, there is the obligation of the physicians to serve in epidemics even at personal risks. The profession of medicine has never shirked or deserted in the face of danger. War has tried us on many occasions and we have met the challenge, but the challenge of the future, particularly the challenge of warfare and atomic age with the possibility of the development of bacteriological techniques, may all too soon challenge our devotion to this ideal.

Our fourth obligation is to warn the public against false pretensions of charlatans which may cause injury and loss of life. Unfortunately when medicine criticizes the charlatans or the inadequately qualified practitioner we immediately place ourselves in a position which makes us vulnerable to the criticism that our objections are purely selfish. In spite of this we have a duty to perform and we must continue to expose the pretensions or the quack wherever he appears.

Lastly, the physician shall promote the profession on pharmacy but deny support to the prescribing pharmacist. This was a much more serious problem half a century ago but even today there is an ample field for medical influence on behalf of the legitimate pharmacist who places the compounding of drugs above the vending of gadgets and the proprietaries.

The most important thing which doctors can do for national organization and the responsibility above all others which I believe they bear, is to continue the rapid development which the profession has experienced in the past century; to bring its service understandably to the attention of the American people, and to see that doctor and patient, and patient and doctor, work together in sympathy and understanding for the solution of our common problems.

One of the great responsibilities the medical profession owes to the people is seeing that the costs of medical care are kept fair and reasonable. It is our duty to offer solutions to the problems which beset the public. We must dedicate ourselves to improving health standards and to the tasks of providing increasingly modern medical care within the reach of every citizen of our community. Costs of illness in many instances are often beyond the current means of any but the most well-to-do families. From the standpoint of medical care, I believe it is best to divide our population into 3 groups—the indigent, the middle class, and those in our higher income bracket. The two best cared for segments are the indigent class, which receives medical care at public expense and the upper income group, which is able to purchase the finest medical service that we have to offer. Our problem is to determine how we can serve the members of the average American family, the middle class, and furnish them with adequate medical care.What can we do? I would like to outline a program that could well be adopted by the members of our own medical society.

Today, excellent voluntary health insurance plans are in existence. This has been one of the great advantages in medicine because it has increased the availability of medical care to people who otherwise could not meet this need. We can point with pride to the success of Blue Cross and Blue Shield plans. However, both the quantity and quality of pre-paid health contracts must continue to rise. We must make a concerted effort to strengthen the voluntary health system, with more liberal membership privileges; fuller service benefits for subscribers and protection against long term illness. These may be difficult to accomplish all at one time, but they should be included in our plans for the future. There is no doubt that voluntary medicine can provide services for far less than the government would require under compulsory insurance.

Nothing can hurt our profession more than reports that physicians are taking advantage of patients by charging exorbitant fees. Such instances may be isolated, but they nevertheless are present and plague us. The creation of a grievance committee will without a doubt, pay great dividends. This committee must conduct fair hearings for patients and physicians wherever these two parties have failed to adjust matters satisfactorily. This committee tackles each problem that comes before it fearlessly and should severely discipline the members of our profession who refuse to reduce their fees to a level that is reasonable for the type of service rendered and is appropriate to the economic status of the patient. This program must be a sincere attempt on our part to solve the differences between the public and the profession. Too many instances of $10.00 for penicillin and too many articles such as Shiner's remarks in "Too Much Surgery", are making an erroneous impress on public opinion.

There is no doubt in my mind that physicians should have more to say about the management of their medical institutions. Too often, the physician is surrounded by the authority of his own destiny, and with it the independence which is his prerogative and his strength, and places it into the hands of lay individuals who actually do not understand the view point of the doctor. The medical profession and hospitals in general must work together for neither group can get along without the other. The physician should have a comprehensive understanding of what the hospital can and should offer him, and, in return, what he should give to the hospital. Hospitals and teaching institutions should not practice medicine in any of its branches for pecuniary gain.

Radiology, and anesthesiology, pathology and other specialized branches constitute the practice of medicine and hospital service plans should exclude all medical service. This should be fought the same time that we fight the control of medicine by the federal government.

What are some of the most urgent needs and their solution? First, improve facilities with the care of the chronically ill, especially the aged and mentally deranged. The solution to this problem is essentially development of suitable housing projects, better utilization of hospital facilities now available, and the extension of various aspects of rehabilitation and home care services. Second, there must be relief for the critical financial burden of medical care for middle and low income patients .What is most needed is the development of a new type of health insurance with long term coverage for office as well as hospital patients and probably with initial cost-deductible features. This is largely an insurance actuarial problem. Further measures include utilization of various types of medical consultant service such as are currently provided by many labor unions, industries and other organizations, and in addition the establishment of municipal or state health centers for the benefit of those for whom such services are not otherwise available. Third, better medical care for the indigent. For an example of the solution to this problem, we need only to look to Maryland where a very fine medical care program is in operation under the department of health. If Maryland can have this enlightened and perfectly practicable service, so can Arkansas. Fourth, economy in the practice of medicine. The high cost of medical care is not the result of excessive fees to physicians.

A most important factor in the expense of medical care is the high cost of drugs. I am convinced that a substantial reduction could be obtained through better understanding and cooperation between physicians and the pharmacist. There must be many ways by which, through mutual agreement and concessions, economy and distribution would operate to the profit, not only of the patient, but of the physician and the pharmacist as well.

I have read a lot of words—but let us bring the meaning of these words to you, personally for your patient's benefit, as well as your own benefit.

1. Are you, as an individual and as a county medical society member, doing all you can to promote better public health?

2. Are you, as a doctor and as a county medical society, well-informed regarding pending medical legislation?

3. Are you, as a doctor, continuing your own progressive medical education? I wonder one of your stronger county societies in this district and not a single member attend the recent, most excellent annual state medical meeting! Do you do your best to provide good programs in your county medical society?

4. Are you doing your utmost to urge people to protect their families with voluntary health insurance?

5. Are you charging reasonable fees—and not $10.00 for penicillin? Think it over, doctor, and score yourself on these questions. "It is later than you think!"

The Medical Technologist, M. T. (ASCP)

Margaret E. Jackson, M. T. (ASCP)
Greenwood, Miss.

MEDICAL TECHNOLOGY is a new profession affiliated with the medical field. It is one of the most important and fastest growing branches. It was born of World War I and came of age in World War II, but is still a comparatively little known field.

In the early days of the clinical laboratory, the pathologist, who was himself just beginning to be recognized as a necessary and important medical specialist, performed his own laboratory tests. As the field of laboratory medicine developed and broadened, the pathologist found it necessary to train assistants to help him perform the simpler tests. In the beginning, it was not uncommon for persons who had not graduated from high school to become apprentices in medical laboratories. A few commercial schools were established, but the training they offered was inadequate and their fees were often exorbitant. Realizing that laboratory medicine was developing rapidly, and that something must be done to standardize the training of these laboratory assistants, the American Society of Clinical Pathologists in 1928 established the Registry of Medical Technologists. Through its efforts to standardize the training of medical technologists, the Registry has come to be recognized by the leading medical and hospital groups as the only authoritative qualifying body for this field.

A great many physicians, encountering for the first time M. T. (ASCP) after a name, do not realize that these initials stand for "Medical Technologist" and that the individual has been approved by the Registry of Medical Technologists. This group has been sponsored by the American Society of Clinical Pathologists with the approval of the American Medical Association, the American College of Surgeons and the American Hospital Association.

In order to ethically use these initials, the individual must have had at least two years of college (often four) including inorganic, quanitative and organic chemistry, bacteriology and biology; all of this followed by at least twelve months of study in an American Medical Association approved school of medical technology.

In 1932, the American Society of Medical Technologists was established as a Michigan Corporation for the purpose of promoting higher standards in clinical laboratory methods and research; to evaluate the status of these working in these fields; to create mutual understanding and cooperation between the medical technologists and physicians; and all others who are employed in the interest of individual or public health. The A. S. M. T. has at all times worked in close cooperation with the Registry.

The A. S. M. T. publishes bimonthly the American Journal of Medical Technology, which contains reports of new and interesting methods and results pertaining to the laboratory field. The society holds a national convention each year, with outstanding guest speakers as well as outstanding members of our profession participating on the program. Here, also, the problems facing our group are discussed and solved with the one thought always dominant — that of improving the profession of medical technology.

Under the guidance of the A. S. M. T., the state societies began to form affiliates of this national organization. The Mississippi Society of Medical Technologists was organized in November 1947 with thirty-five (35) charter members and was incorporated under Mississippi laws in 1948. The M. S. M. T. was the 25th charter affiliate of the A. S. M. T., ranking high in the forty-eight (48) affiliates and has become one of the nation's fastest growing societies, according to the A. S. M. T. records.

The Mississippi Society holds a convention each year, providing for its members outstanding speakers from the medical profession who discuss subjects of timely interest to each of us. The society publishes bimonthly "Microscopic Reports", a news-letter that keeps members informed of current events of their profession as well as providing a medium of exchange of ideas and pet laboratory trade secrets.

The Mississippi Society is working constantly with one goal in mind, that of providing better medical technological service to the doctors of our state. The modern clinical laboratory cannot be efficiently maintained, and the practice of clinical pathology made complete, without the services of more medical technologists who possess an adequate college background in medical science and understand the basic principles of laboratory procedures. The Mississippi Society is fully aware of the urgent needs in the field of laboratory diagnosis. We are vitally interested in the proper training of future laboratory workers. All physicians in our state are in a position to direct young men and women with an interest in science to approved schools of medical technology. At present, here in our state we have two approved schools — Mercy Hospital, Vicksburg, under the direction of Dr. R. H. Fenstermacher, and the Mississippi Baptist Hospital, Jackson, under the direction of Dr. F. D. Bratley. Specific information about educational requirements and approved schools for medical technologists may be obtained from the American Medical Association, or from the Registry of Medical Technologists, Muncie, Indiana. In the future we hope to have other schools, for we realize that if we are to supply adequate technicians for the state, we must have adequate facilities to train them.

The medical technologist today is a proud member of a new, exciting, and fast-growing profession — one that demands a high degree of technological skill; moral and intellectual integrity; one that requires patience and good judgment; and one that requires painstaking, honest and accurate results, for lives may depend upon their findings. There is great personal satisfaction to be gained from intimate contact with the medical profession, through contribution to the relief of human suffering and the cure of disease. No other branch of the healing arts is more vital, and none offers more reward.

REFERENCES

1. The Registry of Medical Technologists of American Society of Clinical Pathologists 16th Edition—January 1, 1950.
2. The Profession of Medical Technology—2nd Edition—June 1, 1949, Registry of Medical Technologists of American Society of Clinical Pathologists.
3. Ikeda, Kano: The Present Trends in Medical Technology, A. J. M. T. 7: 81 1951

ANNOUNCING

The Fifteenth Annual Meeting

The New Orleans Graduate Medical Assembly

Conference Headquarters — Municipal Auditorium MARCH 10-13, 1952

GUEST SPEAKERS

Leo V. Hand, M.D., Boston, Mass.
Anesthesiology
John H. Lamb, M.D., Oklahoma City, Okla,
Dermatology.
J. Arnold Bargen, M.D., Rochester, Minn.
Gastroenterology
Ralph A. Reis, M.D., Chicago, Ill.
Gynecology
Charles A. Doan, M.D., Columbus, Ohio.
Medicine
John P. Merrill, M.D., Boston, Mass.
Medicine
William Parsons, M.D., Charlottesville, Va.
Medicine
Jacob E. Finesinger, M.D., Baltimore, Md.
Neuropsychiatry
Leroy A. Calkins, M.D., Kansas City, Kan.
Obstetrics
John H. Dunnington, M.D., New York, N. Y.
Ophthalmology
Edward L. Compere, M.D., Chicago, Ill.
Orthopedic Surgery
Hayes Martin, M.D., New York, N. Y.
Otolaryngology
Oscar B. Hunter, Sr., M.D., Washington, D. C,
Pathology
Margaret M. Nicholson, M. D., Washington, D. C.
Pediatrics
Paul C. Swenson, M.D., Philadelphia, Pa.
Radiology
Richard B. Cattell, M.D., Boston, Mass.
Surgery
Claude F. Dixon, M.D., Rochester, Minn.
Surgery
Frank C. Hamm, M.D., Brooklyn, N. Y.
Urology

Lectures, symposia, clinicopathologic conferences, round-table luncheons, surgical and medical procedures in color television, technical exhibits and medical motion pictures. (All-inclusive registration fee—$10.00)

The Postclinical Tour to Merida, Mexico City, Cuernavaca, Taxco, and Acapulco — March 15-29

For information concerning the Assembly meeting and the tour write
Secretary, Room 103, 1430 Tulane Avenue, New Orleans 12, La.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. ....Editor-in-Chief
MILDRED P. ANDERSON ....Assistant Editor
David E. Guyton, Blue Mountain College ......Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton ....Oxford
President
Dr. J. G. Thompson ....Jackson
President-elect
Dr. T. M. Dye ....Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. ....President
Greenville, Miss.
H. T. Smith ....President-elect
McGehee, Ark.
L. T. Carl, M.D. ....Vice-President
Jackson, Miss.
D. T. Owens, M.D. ....Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. ....Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. ....Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. ....Hot Springs, Ark.
Frank M. Acree, M.D. ....Greenville, Miss.
R. L. Sanders, M.D. ....Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. ....Jackson, Miss.
J. Harvey Johnston, M.D. ....Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

THE OLD AGE PROBLEM

GUEST EDITORIAL

Jere Crook, M. D.
Jackson, Tenn.

What shall we do with our old men and women — drown them or keep them busy?

The Metropolitan Life Insurance Company reported in the first week in September, this year, that "The expectation of the life span at the time of birth has doubled within the past sixty years — from 34 years in 1890 to 68 years in 1950." In ten years in the United States the number of persons over age 60 has increased by 30 per cent. Thus we have a social problem and an economic problem in integrating these older citizens into our American way of life.

The economic problem may be discussed first. When a man, in good health and in full possession of his mental faculties and trained skills, is fired from his job simply because he has reached his sixty-fifth birthday, the shock to his financial security and emotional stability is a terrific one. I quote from a recent article by Lee E. Graham in the New York Times: "In this country only four out of ten men past 65 are employed, although twice that many could and would work if given the opportunity." In this article Mr. Graham further emphasizes the spiritual and mental effect on the old person by the break-up of family and the children's behavior in leaving Grandma and Grandpa out in the cold except perhaps for a weekly dinner and an occasional job of baby-sitting.

The achievements spoken of by Mr. Graham in New York and the opportunities for recreation and fun provided by the city of St. Petersburg are all to the good, but to my mind the important thing is to keep these old people busy mentally and physically, and allow them to make their contribution to the welfare of the nation as long as they can find opportunities for service. In the case of professional people there is no reason for them to quit until forced to do so by ill health. In the business world and the world of labor employment they should not be forced out as long as they are able to produce the goods.

This is my plea: to keep them working and making a contribution to the American way of life and not become a burden on the taxpayers.

I will cite only a few notable examples of men past 75 in the professional and business fields of service in America: Cordell Hull, 80, and Bernard Baruch, 81, both world statesmen and diplomats; Judge John W. Green, 92, Dr. James D. Hoskins, 81, president emeritus of the University of Tennessee, Judge Ben Hicks, 79, presiding judge of the Sixth United States Circuit Court of Appeals, James A. Fowler, 88, attorney, all four citizens of Knoxville, Tennessee; E. H. Crump, 77, Memphis, John D. Rockefeller, Jr., 77; William Clayton 77, native of Mississippi and head of the largest cotton firm in the world at Houston, Texas. I could mention scores of other notable Americans over 75 who are actually engaged in their varied professions and business interests.

The accomplishments of these notables who are carrying on after the age of 75 should be inspiring and encouraging to all who are past the ordinary period of retirement and who are not suffering physical or mental disabilities. It definitely proves that no man should allow his life's activities, ambitions, and aspirations to be determined by the number of years that have elapsed since his birth. Each individual is a law unto himself. Many men who would be in the very prime of life's activities or enjoyments are, in deed and in fact, old men, while those who have passed the seventy-fifth milestone are still themselves physically and spiritually responsive to the joy of living. They are serving and do not mark their age by the calendar or the family Bible. They even forget their chronological age in the activities and enjoyment that come to them in their daily lives.

FREE MEDICINE

The indications are now that regimentation will again be an issue in our next presidential campaign. Free medicine and the American way of life are in the crucible. Both must be saved. The people of the world owe a great debt to the science of medicine. The magical progress in medicine has been due almost a 100 per cent to free medicine which thinks further, deeper and broader than medicine shackled with political direction. We can not let free medicine be placed in deep freeze to be utilized at will for political gain. The medical profession must show the way with clean hands and noble hearts. The medical profession must not be vulnerable.

The American Medical Association rendered noble service through the fund from the doctors in helping to defeat state medicine at the last bout in Congress. But the most persuasive force was the mental portrait the congressman had of his doctor back home who had faithfully ministered through the years to his family and to the voters at the cross roads and down by the old mill, the practitioner who had entered into the joys and sympathies and problems of the people. It is the doctor who has served his people well in medicine and who has not shunned his responsibility as a citizen, who has immortalized the doctor-patient sacred relationship as physician. This ideal must be adopted by all the components to the medical service unit if medicine remains free. The medical service unit is made up of the doctor, the dentist, the pharmacist, the nurse and the hospital, and indirectly the pharmaceutical house. This unit must share and share alike the responsibility of carrying the best in medicine to all the people at a cost at which it may be utilized. There should be, there must be, a closer understanding and cooperation between these professions that make up the medical service unit. This unit must be inspired by a like noble and unselfish purpose that has activated the deeds of the general practitioner. The medical profession itself can make some improvements and it behooves it to undertake them now while there is time and opportunity.

Medical science has not only multiplied length of years, but it has added volume to human life. Illness is costly to be sure, but other commodities are also. Medicine is expensive but it is also valuable; human life is expensive, but it is very precious. Dollars for years of life is an inescapable measure in human economy. When everything is taken into consideration however, illness is not so much more expensive than it has always been. Job of Bible lore struggled with boils and carbuncles for about two years. Now with the miracle drugs a boil is conquered in five or six days without being picked. We no longer have to puncture ear drums or do mastoids as a rule. Pneumonia is whipped in two or three days when it used to take weeks, and even months. The rule used to be for the mother to remain in the hospital nine days at least when the baby came, but now we do well to keep her three. Malaria, yellow fever, pneumonia, diphtheria, typhoid, tetanus, and multiplied other diseases have been whipped to a frazzle. We can only estimate the value of modern medicine by the price of human life, not by dollars.

Of course, the cost of illness is high along with everything else, but we one and all need to be schooled in values. The public has its responsibility and should meet it. Last year it spent 20 billion for gambling, 17 for whisky, and 12 for tobacco. Gambling kills initiative and stifles progress. Whisky as a beverage is incompatible with the machine age in which we live, and tobacco is under fire from stomach ulcer, cardiovascular disease and cancer of the lung. For these three items the public in round numbers spent fifty billion dollars in one year, 335 dollars for every man, woman and child in the United States. This is ten times as much as it spent for medical care, doctors, medicine and hospitals, ten times as much as it spent for education, fifty times as much as for churches. All medical costs were only 4 per cent of the family dollar.

The strength of the nation is in the health of its people. Divinely inspired human brains can outwit the atomic bomb, can give us peace and security in place of death and destruction. The medical service unit can yet give more efficient service to the public at less cost. It should do this. But on the other side the public should readjust its estimates of the miraculous benefits it has had at the hands of free medicine. The cost of illness is a mere pittance compared to the money that the public simply throws to the wind on non-essentials.

OUR INDIGENT SICK

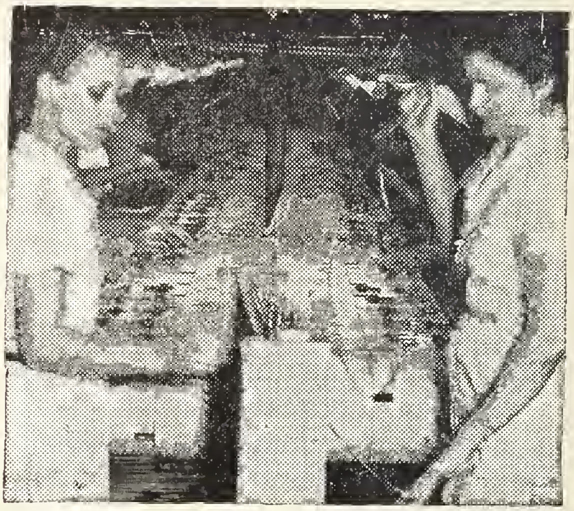
Charity we have with us always. It is no sin to be poor, but mighty inconvenient for the unfortunate one. Mississippi has a per capita fund for the indigent sick, but which fund pays only four dollars a day. With the advanced prices this of course is inadequate.

A hospital should not expect to make a profit off a charity patient, really a hospital should not expect to make a profit off any patient, certainly not the indigent. We rejoice that when our hospital system is completed it will be the best in the nation. Our plan for charity is also the best. But the small amount of four dollars per day leaves nothing for medicine. It is worth little to give a patient a hospital bed but no medicine. It is very unkind to hound him for pay for his medicine or beg his neighbors for donations. Many good and worthy people have to go to a hospital on charity. They deserve reasonable treatment. We think our state should provide six or seven dollars per day, seven would be reasonable, plus ten for an operating room. Then medicine and other necessary services should be furnished the patient without extra funds being begged or high pressured from the unfortunate sick. Our state is able to do this if we designate care for only those who are acutely sick and truly indigent.

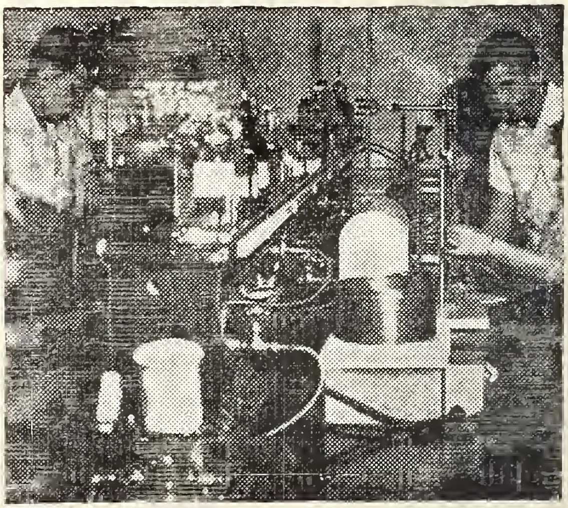
News and Comment

BAWI PLANT AT CLEVELAND MAKES BLOOD EQUIPMENT FOR ARMED FORCES

The new Baxter Laboratories, Inc., Plant at Cleveland, Mississippi, is busy turning out blood collecting units, blood and plasma administration sets for the Armed Forces. The plant started operations last August and in a few weeks time was in full production making intravenous solutions and blood collecting equipment. When the Korean War broke out all efforts turned toward supplying the needs of the Armed Forces.



Shown above is the administration set production line. All personnel are furnished white uniforms at company expense. It is one of the many measures taken to insure that the products made are sterile and free of contamination.



The chemistry laboratory at the Baxter plant is staffed by graduate chemists of state schools. All raw material and products are checked in the plant laboratory by intense laboratory testing procedures.

The plant, covering 1½ acres, now employs approximately 325 people. Several weeks ago a new 40,000 sq. ft. addition to the present facilities was authorized by the City of Cleveland and Baxter Laboratories under the BAWI Program. This new space will allow more "control" area for all raw material and products must be meticulously tested by the Chemistry Department to make certain that all products are sterile and free of contamination. The new area will also afford more facilities to serve the Southern hospitals and doctors, as well as the Armed Forces.

A C S

At the annual meeting of the governors and fellows of the American College of Surgeons held in San Francisco, November 8, Dr. Willard H. Parsons of Vicksburg was elected a member of the executive committee on the board of governors.

Members from Mississippi admitted to membership include:

Leonard Allen Bible, Jackson; Richard F. Gates, Gulfport; Charles A. Murray, Greenville;Rush E. Netterville, Jackson; William B. Wiener, Jackson; Roy C. Wigginton, Corinth.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The fifteenth annual meeting of the New Orleans Graduate Medical Assembly will be held March 10-13, headquarters at the Municipal Auditorium.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. In addition, the program will include symposia on "Resuscitation" and "Complications of Antibiotic Therapy and Their Management", daily demonstrations of medical and surgical procedures in color television, clinicopathologic conferences, medical motion pictures, over 100 technical exhibits and three round-table luncheons.

The Assembly has planned another interesting postclinical tour to follow the 1952 meeting in New Orleans. On Saturday, March 15, a party composed of doctors and their families will leave by plane for Merida, Yucatan, Mexico. The itinerary also includes Mexico City, Cuernavaca, Taxco and Acapulco in addition to other sightseeing. Arrangements have been made for medical programs and visits to hospitals in Merida City. The group will return to New Orleans on Saturday, March 29.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

ANNOUNCEMENT

William Calvert Chaney, M. D., announces the association of Charles V. Dowling, M. D., in the practice of Internal Medicine and Cardiology, 214 Physicians and Surgeons Building, Baptist Hospital, Memphis, Tenn.

COUNTY SOCIETIES URGED TO COOPERATE WITH ESSAY CONTEST

This is the sixth year that the Association of American Physicians and Surgeons has sponsored an essay contest for high school students on the subject "Why the Private Practice of Medicine Furnishes This Country with the Finest Medical Care." County societies will find the local auxiliary units eager to help promote this essay contest, and physicians will find the contest a fine means of offsetting socialistic teachings. The county society should offer prizes for three winners, and the winners shall in turn be permitted to participate in the state contest. AAPS then offers six national prizes: $1000, first; $500, second; $100, third; $25 each for fourth, fifth, and sixth places.

The rules and conditions are:

1. Junior and Senior High School students (7th, 8th, 9th, 10th, 11th and 12th Grades) from all public and parochial schools located in the United States are eligible to enter the contest — except sons and daughters of physicians.

2. Essays must be limited to 1500 words.

3. Essays should be written on one side of letter size paper (8½ x 11) and if typewritten, double spaced.

4. Contest starts January 1, 1952 and essays must be submitted on or before March 1, 1952 to:

(a) County or local medical society or auxiliary sponsoring Contest; or to

(b) State society or auxiliary sponsoring Contest (in the event no county or local group sponsors it); or to

(c) Association of American Physicians and Surgeons, 360 N. Michigan Avenue, Chicago 1, Illinois, in the event no Contest is sponsored by either a county or state society.

5. First three prize winning essays from each county or local medical society must be sent to:

   (a) The state medical society on or before March 15, 1952 (if it is sponsoring a state Contest) to compete for state awards; or

   (b) To Association of American Physicians and Surgeons on or before April 1, 1952, 360 N. Michigan Avenue, Chicago 1, Illinois, to compete for national awards (in the event no state contest is held).

6. First three prize winning essays from each state must be sent to the Association of American Physicians and Surgeons, on or before April 1, 1952, 360 N. Michigan Avenue, Chicago 1, Illinois, to compete for national awards.

7. Compositions must be original and should be well documented.

8. JUDGING: Will be based solely on knowledge and grasp of the subject supported with documentation, and sound, logical conclusions.

9. JUDGES: For county and state contests and the national contest: A physician, an educator, and another person, all of whom shall have some special knowledge of the subject.

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

FEBRUARY 12-15, 1952

COMMERCIAL EXHIBITS

As of November 26, 1951

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
Ames Company, Inc., Elkhart, Indiana
Ayerst, McKenna & Harrison, Ltd., New York, N. Y.
Bilhuber-Knoll Corporation, Orange, New Jersey
Brayten Pharmaceutical Company, Chattanooga, Tennessee
Brown & Williamson Tobacco Corporation, Louisville, Kentucky
Burroughs Wellcome & Co. (U.S.A.) Inc., New York, New York
G. W. Carnrick Company, Newark, New Jersey
Ciba Pharmaceutical Products, Inc., Summit, New Jersey
Coreco Research Corporation, New York, New York
Cosmo Cautery Company, St. Louis, Missouri
Delta Surgical, Inc., Memphis, Tennessee
Dick X-Ray Company, Memphis, Tennessee
H. G. Fischer & Co., Franklin Park, Illinois
General Electric X-Ray Corporation, Memphis, Tenn.
Gerber Products Company, Fremont, Michigan
The Harrower Laboratory, Inc., Jersey City, New Jersey
H. J. Heinz Company, Pittsburgh, Pennsylvania
Hoffman-LaRoche, Inc., Nutley, New Jersey
Holland-Rantos Company, Inc., New York, New York
Irwin, Neisler & Company, Decatur, Illinois
Kay Surgical, Inc., Memphis, Tennessee
Lederle Laboratories Division, American Cyanamid Company, New York, New York
Eli Lilly and Company, Indianapolis, Indiana
J. B. Lippincott Company, Philadelphia, Pennsylvania
M & R Laboratories, Columbus, Ohio
J. A. Majors Company, New Orleans, Louisiana
Mead Johnson & Company, Evansville, Indiana
Medco Products Company, Tulsa, Oklahoma
Memphis Limb & Brace Company, Memphis, Tenn.
Mercere-Stover, Inc., Memphis, Tennessee
Merck & Co., Inc., Rahway, New Jersey
The Wm. S. Merrell Company, Cincinnati, Ohio
Philip Morris & Co., Ltd., Inc., New York, New York
The National Drug Company, Philadelphia Pennsylvania
Ortho Pharmaceutical Corporation, Raritan, New Jersey
Parke, Davis & Company, Detroit, Michigan
Pet Milk Company, St. Louis, Missouri
Chas. Pfizer & Co., Inc., Brooklyn, New York
Sandoz Chemical Works, Inc., New York, New York
Schering Corporation, Bloomfield, New Jersey
Sealy Company of the Southeast, Memphis, Tennessee
Sharp & Dohme, Inc., Philadelphia, Pennsylvania
Southern Surgical Supply Company, Memphis, Tenn.
E. R. Squibb & Sons, Long Island City, New York
Wm T. Stover Co., Inc., Little Rock, Arkansas
The Stuart Company, Chicago, Illinois
Travenol Laboratories, Inc., Morton Grove, Illinois
The Upjohn Company, Kalamazoo, Michigan
U. S. Vitamin Corporation, New York, New York
Vaisey-Bristol Shoe Co. Inc., Rochester, New York
The Warren-Teed Products Company, Columbus, Ohio
Winthrop-Stearns Inc., New York, New York
White Laboratories, Inc., Newark, New Jersey
Wyeth Incorporated, Philadelphia, Pennsylvania

UROLOGY AWARD

The American Urological Association offers an award of $1000.00 (first prize of $500.00, second prize $300.00 and third prize $200.00) for essays on the result of some clinical or laboratory research in urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to men in training to become urologists.

For full particulars write the Secretary, Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City, New Jersey. Essays must be in his hands before February 15, 1952.

DEATHS

DR. W. S. ANDERSON

Dr. William Sadler Anderson, Sr., whose career as a physician and surgeon began in Memphis more than 50 years ago, died at his home there at 9:15 Thursday night, September 27, after a long illness. He was 74.

Dr. Anderson maintained offices in the Medical Arts Building up until his retirement four years ago because of failing health.

He was a native of Holly Springs, the son of John E. Anderson and Annie Sailer Anderson. He graduated from Southwestern, then at Clarksville, Tennessee, and in 1899 graduated from Tulane University. After serving his internship at Bellevue Hospital in New York City, and Natchez Charity Hospital, Natchez, Mississippi he began his practice in Memphis. He married the former Jane Shegog of Columbia, Tennessee, who survives.

He was an elder of the Second Presbyterian Church, a charter member of the University Club, and a member of ATO Fraternity.

He also was a member of the Memphis and Shelby County Medical Association, the Southern Medical Association, and the American College of Surgeons.

Besides his wife, he leaves a daughter, Mrs. Will Harris of Chattanooga, a son William S. Anderson, Jr., of Columbia, Tennessee, two brothers, Percy H. Anderson of Memphis and Raymond Anderson of Holly Springs; and three sisters, Mrs. Maude DuPre and Mrs. Napoleon Grosvenor of Memphis and Mrs. Hugh Rather of Holly Springs.

DR. RUSSELL TIGERT

Dr. Russell Tigert, 64, who had practiced medicine in Soda Springs, Idaho, since 1915, died in a Soda Springs hospital of internal injuries suffered when his car went out of control and crashed Monday night.

Dr. Tigert was driving to Pocatello on a business trip when his auto struck a soft shoulder.

Dr. Tigert was born June 5, 1887, in Dumas, Miss., a son of Mr. and Mrs. David Tigert.

He was a member of the American Medical Assn., the American Association of Railway Surgeons, Soda Springs Odd Fellows Lodge, Pocatello Elks Lodge and the Presbyterian Church. Mrs. Tigert died here Feb. 2, 1939.

Surviving are six sons and daughters, Dr. Russell Tigert Jr., Montpelier; Dr. Allen Tigert, Soda Springs dentist; Mrs. Martha Jones, Twin Falls; Mrs. Isabel Robertson, Wendell, and Mrs. Charlotte Salser, Soda Springs; 12 grandchildren, also a brother and sister, W. B. Tigert, Winston-Salem, N. C., and Mrs. Elsie Humphrey, Artesia, Miss.

DR. T. J. SMITH

Dr. Thomas Jefferson Smith, prominent Meridian physician and brother of a Jackson resident, died at his home September 4 following a lengthy illness. He was 66.

Dr. Smith was a graduate of the Atlanta School of Medicine and first practiced at Stringer, moving to Meridian in 1913. He was the brother of Mrs. B. A. Boutwell of Jackson.

He was a member of the American, Southern, Mississippi, East Mississippi and Lauderdale County medical associations and was a veteran of World War I. He was also a member of the dramatic Order of the Knights of Khorassan and a charter member of the new Temple Baptist Church.

Dr. Smith is survived by his wife, Mrs. Bessie Smith; three sons, Krauss, Land, and Jack Smith, all of Tulsa; brother, Charles S. Smith of Louin; three sisters, Mrs. J. F. Ainsworth of Louin; Mrs. J. J. Ishee of Laurel, and Mrs. B. A. Boutwell of Jackson; five grand-daughters and a grandson.

DR. EDWIN J. LIPSCOMB

Dr. Edwin J. Lipscomb, identified as one of the outstanding orthopedic surgeons in the south, died in Memphis, September 10, of a heart attack.

The 65-year-old Lipscomb was born in Nashville, Tenn., the son of the late Granville G. and Mary Annie Lipscomb. He graduated from Vanderbilt medical school in 1909, and started his practice at Itta Bena, Miss.

DR. E. W. CROCKER

Funeral services were held October 1 in Calhoun City for Dr. E. W. Crocker, prominent Calhoun County physician and surgeon who was killed when his car left the road and overturned in a creek on Highway 8 near Graysport where he went on an early morning call.

He was 42, a member of First Baptist Church, and of the American Legion, having served as captain in World War II. A native of Calhoun County, he was a graduate of University of Tennessee School of Medicine and owned and operated the Calhoun City Clinic the past six years.

He leaves his wife, Mrs. Nettie Crocker and four children of Calhoun City; his parents, Mr. and Mrs. J. A. Crocker; two brothers, Dr. O. B. Crocker and Rev. W. M Crocker; three sisters, Mrs. V. T. Harrelson, Mrs. Ellis Ivy, Miss Vestra Crocker, all of Bruce.

DR. H. R. HAYS

Dr. Hardie Rogers Hays, 69 year-old resident of Robinson Road, Jackson, Miss., died suddenly at his home early Tuesday.

He was a native of Memphis and was a graduate of the Memphis Hospital Medical College. He also had degrees from Johns Hopkins University and Tulane.

He was a veteran of World War I, and was a member of the American Legion, Central Medical Society, State Medical Association and was on the staff of the Baptist Hospital.

Dr. Hays was one of the organizers of the Van Winkle Methodist Church and served as the first chairman of the board of stewards of that church.

He came to Jackson in 1919 and was associated with the Hinds County Health Department for 10 years before going into private practice. He retired three years ago.

Survivors include his wife; two daughters, Mrs. Lillian Hays Dupont of Jackson and Mrs. James A. Patterson of Newton; one son, Hardy R. Hays, Jr., of Jackson; one sister, Mrs. George W. Neal of Russellville, Ark.; and four grandchildren. Another son, Staff Sgt., John Hays was killed in the Carribean Sea while serving as a radio operator with the Air Force two years ago.

DR. J. C. McNAIR

Dr. John Clement McNair, 79, died in Gulfport, Miss., October 16, after an extended illness. He was the brother-in-law of Mr. W. B. Abbott of Natchez.

Dr. McNair graduated from Tulane University with a medical degree in 1898. He practiced medicine at Fayette for many years and was the superintendent of the Charity Hospital in Natchez a few years ago. He was a major in the Medical Corps during World War I and saw action overseas.

Make your Plans Now . . .
to attend the Mid-South Postgraduate Medical
Assembly in Memphis, February 12 - 15, 1952,
Hotel Peabody.

MISSISSIPPI STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

VITAL STATISTICS — 1950

by
MARGARET E. RICE, M. Sc.
Public Health Statistician

The 1950 annual **Bulletin of Vital Statistics** has just been completed and contains much information of interest to physicians, public health workers and others.

Population

Population figures for 1950 are the decennial census counts as of April 1, 1950. County distributions are from final tabulations released by the Census Bureau and the distribution by race was secured from special preliminary tabulations furnished to the State Board of Health. The preparation of this Bulletin has been delayed until these figures were available since there appeared to be wide discrepancies between the census counts and the estimates previously used by this office. According to the census tabulations, the State of Mississippi had a total population of 2,178,914 as of April 1, 1950, showing a net loss during the ten-year period since the last census of 4,882 or 0.2 per cent. There was an increase in the white population of 82,102 or 7.4 per cent and a decrease in the non-white population of 86,984 or 8.1 per cent. The non-white component of the population decreased from 49.3 per cent in 1940 to 45.4 per cent in 1950.

The large changes in population counts necessitate drawing one or both of two conclusions: that there has been a tremendous out-migration of population within the past ten years or that the census under-enumerated the current population.

If all of the change was due to out-migration, an average of over a hundred people have left the State of Mississippi each day during the 10 years, 1940-49. This number was calculated by adding the excess of births over deaths to the population decrease shown by the census. The excess of births over deaths, which would indicate normal increase in a population with migration, has mounted to 385,758 in the ten-year period 1940-49. However, according to the census, the population decreased 4,882 and the net difference is 390,640 (96,869 whites and 293,771 non-whites).

On the other hand, there is evidence that population counts in certain counties were not complete, especially for non-whites. Birth rates for non-whites exceeded 40 per 1,000 population in 17 counties scattered throughout the state and in one county (Greene) the non-white birth rate exceeded 50. Altogether there were 62 out of the 82 counties which had non-white birth rates of 35 and more per 1,000 enumerated population. If these rates could be corrected for under-registration of births, many of these also would probably exceed 40. According to the 1950 census figures distributed by the 1940 age breakdown, one out of every 9 non-white females from 10 through 54 years of age was delivered of a live born infant during 1950. Rates of this size are unreasonably large even in an extremely fertile population and they must be considered of questionable accuracy until more complete analysis of these high rates can be made when final age-race-sex distributions of the populations are available.

BIRTHS

Live Births

There were 64,427 live births to residents of Mississippi registered during 1950. This number was 1,701 less than the number in 1949, a decrease of 1,598 whites and 103 non-whites. Based on the census population in 1950, the crude birth rate was 29.6 per 1,000, which was higher than the 1949 rate of 28.1, calculated on estimated population. The rate for whites, 22.9, continued to decline but the rate for non-whites increased to 37.6 per 1,000, the highest non-white birth rate ever recorded in the State of Mississippi. In actual numbers, more non-white births were registered both in 1949 and in 1950 than in any other previous years, a fact which is inconsistent with the large population loss shown on the census. The white rates by counties varied from a low of 14.9 in Jefferson County to 31.4 in Adams County. The non-white birth rates ranged from 26.5 in Hancock County to 52.5 in Greene County, with 62 counties showing rates of 35 and more.

During the year 33,000 males and 31,427 females were born. The ratio of 1,050 males to 1,000 females was slightly higher than was found in 1948 and in 1949. The urban-rural distribution of live births shows 18,507 live births in urban areas (9,631 whites and 8,876 non-whites) and 45,920 in rural areas. The differences between occurrence and residence data indicate that many of the white mothers and a few of the non-white mothers went to cities for delivery.

Of the 64,427 live births to residents of Mississippi, 6,778 or 10.5 per cent were recorded as illegitimate, 283 whites and 6,495 non-whites.

On table B is shown the distribution of live births by race and attendant. About five-sixths of the white births and one-sixth of the non-white births were in hospitals, constituting only 46.1 per cent of the total. There were 23,648 midwife deliveries, approximately the same number as in 1949.

TABLE B

Distribution of live births by race and attendant

Attendant	Total		White		Non-White	
	No.	%	No.	%	No.	%
Total	64,427	100.0	27,188	100.0	37,239	100.0
Phys'n in hospital	29,687	46.1	22,643	83.3	7,044	18.9
Phys'n in home	10,961	17.0	3,974	14.6	6,987	18.8
Midwife	23,648	36.7	522	1.9	23,126	62.1
Other	131	0.2	49	0.2	82	0.2

The proportion of live births in hospitals has continued to increase within recent years. Percentages shown on table C indicate a steady rise for both races since 1946. For the whites the percentage has increased from 69.8 in 1946 to 83.3 in 1950 and for the non-whites from 9.5 to 18.9.

TABLE C

Percentage of live births in hospitals.

Year	Total	White	Non-White
1950	46.1	83.3	18.9
1949	44.3	80.1	16.6
1948	42.8	77.9	13.6
1947	41.7	73.8	11.0
1946	38.7	69.8	9.5

Table D contains the proportions of deliveries by physicians during the last five years. Physicians delivered 97.3 per cent of the white mothers in 1946 and 97.9 per cent in 1950.

TABLE D

Percentage of live births attended by physicians

Year	Total	White	Non-White
1950	63.1	97.9	37.7
1949	63.6	97.8	31.2
1948	63.0	97.6	34.2
1947	64.1	97.7	31.9
1946	62.5	97.3	30.0

The non-white proportion has increased from 30.0 to 37.7 in this period. The variation in the total percentages is directly related to the racial composition of the births which has become unusually weighted with Negro births in the last three years.

The distribution of live births by age of mother is shown on table E. The proportions remained fairly stable in comparison with 1949 with about half of the mothers between 15 and 24 years and about a third from 25 through 34 years. The non-white mothers were slightly younger than the whites.

TABLE E

Distribution of live births by age of mother

Age of Mother	Total	White	Non-White
Total	64,427	27,188	37,239
Under 15 years	471	38	433
15-24 years	32,958	13,180	19,778
25-34 years	23,336	10,882	12,454
35-44 years	7,252	2,996	4,256
45-54 years	160	44	116
55 years +	0	0	0
Unknown	250	48	202

Stillbirths

There were 1,853 stillbirth certificates filed during 1950 and 1,836 resident stillbirths. For the first time, stillbirth transcripts were included in the tabulations, since 13 were received.

The distribution by race and attendant is shown on table F. Almost three-fourths of the stillbirths were non-white. Following the usual trend, a larger proportion of the non white stillbirths occurred in hospitals than of the non-white live births. Two factors may be responsible for this situation: under-reporting of stillbirths which occur at home and the tendency to transfer difficult deliveries to the hospital. The sex ratio of stillbirths was 1,286 males to 1,000 females, a higher ratio than was found for live births and a lower ratio than occurred in 1949.

TABLE F

Distribution of stillbirths by race and attendant

Attendant	Total		White		Non-White	
	No.	%	No.	%	No.	%
Total	1,836	100.0	484	100.0	1,352	100.0
Phys'n in hosp.	858	46.7	388	80.2	470	34.8
Phys'n in home	400	21.8	88	18.2	312	23.1
Midwife	563	30.7	4	0.8	559	41.3
Other	15	0.8	4	0.8	11	0.8

A five-year comparison of hospital deliveries of stillbirths is shown on table G. The non-white proportions have consistently increased since 1946, from 20.7 per cent to 34.8 per cent in 1950. The percentages among the white stillbirths have also increased, from 74.0 in 1946 to 80.2 in 1950, although there was a decline in 1949. The proportion for total stillbirths was 46.7 per cent in 1950, only slightly higher than the 46.1 per cent of the live births which occurred in hospitals.

TABLE G

Percentage of stillbirths in hospitals

Year	Total No.	Total %	White No.	White %	Non-White No.	Non-White %
1950	858	46.7	388	80.2	470	34.8
1949	831	42.3	401	76.5	430	29.8
1948	835	42.4	448	79.7	387	27.5
1947	773	39.0	421	74.4	352	24.9
1946	748	37.4	465	74.0	283	20.7

Deaths

Classification of Causes of Death

Causes of death were assigned to the Sixth Revision (1948) of the International Statistical Classification of Causes of Death. Only primary causes of death were assigned. Changes in coding procedures between 1949 and 1950 were minor, but comparisons with other years should be made with caution since the revision of the code was responsible for several shifts in the distribution of deaths by cause.

Resident Deaths

There were 20,567 deaths of residents of Mississippi during 1950, a slight increase over 1949. Based on the census population, the crude death was 9.4 per 1,000 population, a rate higher than the 8.7 per 1,000 in 1949 based on estimated population. Both the rate for whites, 8.0, and that for non-whites, 11.2. increased over the rates for 1949, although the number of deaths of white persons increased by 233 and the number of non-whites decreased by 155. There were wide variations in the rates by counties, with the rate for whites ranging from 2.5 in Issaquena to 12.6 in Claiborne. The non-white rates varied from a low of 6.8 in Jefferson Davis County to a high of 23.6 in Tishomingo. Non-white rates in 55 counties were 10 or more per 1,000 census population.

The urban-rural distribution of deaths, although not complete according to the new definition, showed that 6,158 urban residents died during 1950 — 3,059 whites and 3,099 non-whites.

The resident birth rate for 1950 exceeded the death rate by 20.2 per 1,000 population, the highest excess ever recorded in Mississippi, although in actual numbers the excess was greater in 1947, 1948 and 1949. The excess for whites was 14.9 and for non-whites was 26.4.

Age Distribution

Table H shows the age-race distribution of deaths. Following the established trend, relatively larger proportions of non-white deaths occurred in the younger age groups than of whites. More than half the deaths of white persons were among those 65 years and over and the proportion among non-whites was less than two-fifths. There is some evidence that, within the past few years, relatively more deaths are occurring among older persons and fewer among infants, but these changes may be due to a shift in population composition.

TABLE H

Age-race distribution of deaths

Age Group	Total No.	Total %	White No.	White %	Non-White No.	Non-White %
All Ages	20,567	100.0	9,466	100.0	11,101	100.0
Under 1 year	2,348	11.4	763	8.1	1,585	14.3
1-4 years	488	2.4	157	1.6	331	3.0
5-9 years	182	0.9	67	0.7	115	1.0
10.14 years	171	0.8	62	0.6	109	1.0
15-24 years	681	3.3	231	2.4	450	4.0
25-34 years	871	4.2	317	3.3	554	5.0
35-44 years	1,374	6.7	499	5.3	875	7.9
45-54 years	2,170	10.6	843	8.9	1,327	12.0
55-64 years	2,950	14.3	1,419	15.0	1,531	13.8
65 years +	9,304	45.2	5,106	53.9	4,198	37.8
Unknown	28	0.1	2	.	26	0.2

Leading Causes of Death

The ten principal causes of death are listed on table I. Following recommended procedures, the grouping of causes is somewhat different in 1950, since acute nephritis is no longer combined with other forms of nephritis and since influenza has been included with pneumonia. Because of this new grouping, causes number 6 and 7 in the 1949 list were reversed in 1950. Accidental deaths became cause number 4 in 1950, exchanging places with certain diseases of early infancy because of an actual increase both in motor vehicle accidents and in other types of accidents.

TABLE I

Ten leading causes of death

Cause with Int. List No.	Number of Deaths Total	White	Non-White
1. Heart disease (410-443)	5,546	3,158	2,388
2. Vascular lesions affecting central nervous system (330-334)	2,200	971	1,229
3. Malignant neoplasms (140-205)	2,143	1,333	810
4. All accidents (800-962)	1,319	694	625
5. Certain diseases of early infancy (760-776)	1,142	467	675
6. Pneumonia and influenza (480-483, 490-493	817	330	487
7. Chronic & unspec. nephritis & other renal sclerosis (592-594)	647	218	429
8. Tuberculosis (001-019)	558	179	379
9. Homicide (964, 980-995)	301	41	260
10. Arteriosclerosis (450)	276	177	99

Heart disease was the leading cause of death for both races, accounting for 27 per cent of all deaths. Vascular lesions affecting the central nervous system ranked second with about 11 per cent and malignant neoplasms third with 10 per cent. Of the total deaths, 72.7 per cent were assigned to these 10 leading causes of death.

By race, these same causes led all the others except, that among the whites, congenital malformations replaced homicide and, among the non-whites, diseases of pregnancy, childbirth and the puerperium replaced arteriosclerosis.

The five leading causes of death are shown on table J for the age groups under 1 year, 1-4 years, 5-14 years, 15-34 years, 35-54 years, and 55 years and over. The listed causes varied from group to group, but certain conditions appeared frequently. Accidents appeared as one of the 5 leading causes of death in every age group except under one year and were the principal cause from 1 to 34 years. Pneumonia and influenza, as well as congenital malformations, were included as a cause in all groups under 15 years, and malignant neoplasms were listed in the age groups 1-4, 5-14, 35-54 and 55 years and over. Tuberculosis was a leading cause in the groups 5-14, 15-34 and 35-54 years. Diarrhea and enteritis were a listed cause for infants under one year of age and for those 1-4 years. Homicide and maternal deaths appeared only in the age group 15-34 years. Heart disease was in all groups over 15 years and vascular lesions of the central nervous system were in the two oldest age groups.

In spite of an effort to secure complete information on cause of death, a large proportion of deaths in Mississippi each year cannot be assigned to specific cause. During 1950 there were 2,187 deaths classified as having ill-defined and unknown causes, an additional 219 to senility and 621 to ill-defined diseases of early infancy. Altogether there were 3,027 with unsatisfactory statement of cause; this number was 14.7 per cent of the total, 6.7 per cent of the white deaths and 21.6 per cent of the non-white deaths. This large number of deaths, if properly assigned, might change the rank of the principal causes of death as listed and might even change the causes themselves. This group presently attributed to senility, ill-defined and unknown causes is one of the 5 leadng causes in every age group except 15-34 years and is exceeded only by heart idsease in the total deaths.

Deaths by Cause

Most of the cause-specific death rates in 1950 show an increase over those for 1949. Some of these increases, especially in the rates for non-whites, occurred in spite of decreases in numbers of deaths. This situation arises because of the difference in populations, since the estimated population used in 1949 was much higher than the census counts used in 1950 and the sudden change produces noncomparable rates. If possible, populations and rates will be recalculated when complete census figures are available and more reasonable estimates can be made.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

PEDIATRICS

SEGMENTAL RESECTION OF THE ESOPHAGUS IN INFANTS. Champs Lyons, Alton Ochsner and Ralph V. Platon, Birmingham, Ala. South. M. J. 43: 585—89, July 1950.

"The authors present their experience with 2 cases of incomplete esophageal obstruction due to congenital anomaly of the esophagus. In the first patient, a 6 week old infant, a transpleural approach was used to divide an esophageal web with resuture of the esophagus. In the second infant, 8 months of age, a resection was done for the midthoracic stricture and a congenitally short esophagus. An end to end anastomosis was performed without complementary gastrostomy.

"The point is made that motor dysfunction tends to persist for 6 to 18 months for surgical correction of an obstruction associated with proximal dilation of the esophagus. It is the feeling of the authors that during this period of time the infant should be maintained on a liquid diet, and that bougienage should be avoided. In other words, until the esophagus returns to normal size, any trauma is apt to precipitate esophagitis and recurrent inflammatory obstruction. The advantages of a direct surgical approach over the results of programs of bougienage are discussed. Early experience has encouraged further exploitation of segmental resection in dealing with strictures in association with congenital anomalies of the esophagus in infants."

COMMENTS: This is a very important paper and should receive serious consideration from physicians who come in contact with similar cases. The most important thing to be considered in these cases is that they should receive good attention from those who are well qualified to handle such cases. Such cases as this, as well as anomalies of the bronchial tree where there is found to have been an opening through the esophagus to the bronchial tree, frequently demanding prompt attention shortly after birth. All in all, this is a case that would attract our attention and should have very prompt service. We have had a good many of these cases operated in the last year or two, most of which have gotten good results and, in fact, their lives have been saved by the proper treatment. But the most important point to be considered is to receive attention immediately after they are born.

Woman's Auxiliary

OFFICERS

President	Mrs. George W. Owen	Jackson
President-Elect	Mrs. Richard Clark	Hattiesburg
First Vice-President	Mrs. W. H. Anderson	Booneville
Second Vice-President	Mrs. Willard Waldron	Jackson
Third Vice-President	Mrs. I. C. Huggins	Jackson
Recording Secretary	Mrs. C. C. Hightower	Hattiesburg
Treasurer	Mrs. J. D. Simmons	Cleveland
Parliamentarian	Mrs. V. B. Philpot	Holly Springs
Corresponding Secretary	Mrs. P. R. Greaves	Jackson

COMMITTEE CHAIRMEN

Program	Mrs. T. A. Baines	Jackson
Research and Romance of Medicine	Mrs. I. J. Newton	Greenville
Legislation	Mrs. J. G. Thompson	Jackson
Doctor's Day	Mrs. L. J. Clark	Vicksburg

ANNUAL EXECUTIVE BOARD MEETING

With Mrs. George W. Owen, state president, presiding, members of the executive board enjoyed a luncheon at which Mrs. Owen was hostess at the Robert E. Lee Hotel on November 29. Lavish Christmas decorations lent charm to the delightful affair.

Among agenda considered for the year, the state organization agreed to give a fifty-dollar E-Bond as a first prize for the winning essay in the essay contest sponsored by the Association of Physicians and Surgeons for high school students on the subject "Why the Private Practice of Medicine Furnishes This Country with the Finest Medical Care". These must be judged by the end of March.

Mrs. A. J. McIlwain of Pascagoula, chairman of the committee for nurse scholarships, will have the president, Mrs. Owen, and the president-elect, Mrs. Richard Clark, the secretary, Mrs. C. C. Hightower, and the treasurer, Mrs. J. D. Simmons, to share the responsibilities of this committee.

Mrs. H .F. Garrison, Sr., requested that each auxiliary prepare its history and send it to her before the state meeting next May.

Inspiring talks were heard from Dr. McNair, chairman of the advisory council and Mr. Kennedy, executive secretary of the medical association.

DID YOU?

Did you remember to give at least one subscription to "Today's Health" for a Christmas present?

AUXILIARIES URGED TO COOPERATE WITH AAPS

Local auxiliaries are urged to cooperate with their local medical societies in sponsoring the annual essay contest of the Association of Physicians and Surgeons. High school students are encouraged by their local physicians to compete for county awards, and the winners then become eligible for the state contest and the national awards—$1000, first place, $500 second place, and four smaller prizes. This is a fine way to educate our coming generation on the facts of medical service.

Difficulties in the Early Recognition of Myocardial Infarction[†]

Addison L. Messer, M. D.*
Birmingham, Ala.

IN THE MAJORITY of instances the diagnosis of myocardial infarction presents little difficulty. The clinical symptoms are well known and the electrocardiographic findings have been clearly described. Yet errors in diagnosis occur with sufficient frequency that an analysis for the reasons thereof is justified. No attempt will be made to describe the usual symptoms or electrocardiographic findings in myocardial infarction since these are adequately discussed in various texts and papers dealing with the subject. It is the patient with an atypical history or non-specific electrocardiographic changes or a combination of both that constitutes the problem in diagnosis. In this discussion only cases with an atypical feature will be presented, for the typical findings present no problem in diagnosis. It is assumed that the reader is familiar with the electrocardiographic patterns of posterior and anterior myocardial infarction.

The most important aspect of diagnosis is an adequate history with the proper evaluation of the presenting symptoms. It is not enough to localize pain in the chest or over the region of the precordium; the severity, the duration, the character, the mode of onset and the factors which precipitate or aggravate the pain must be completely described and carefully evaluated. Previous episodes of pain, their relation to effort, and relief by rest or nitroglycerine are so important and well known that they hardly need emphasizing. The usual story of severe dull, substernal pain or constriction with radiation to one or both arms, sweating, and anxiety, associated with a fall in blood pressure are seldom misdiagnosed. Rather it is the patient who complains of high epigastric distress attributed to gas or indigestion with a desire to belch and a history of some preceding symptoms again attributed by the patient to indigestion that mislead the physiican. The proper evaluation of the presenting symptoms is of the utmost importance for once the diagnosis of acute myocardial infarction is strongly suspected, complete restriction of physical activity is indicated until the diagnosis is either established or disproved.

Three common errors in the diagnosis of myocardial infarction are 1) insufficient history data, 2) inaccurate interpretation of the presenting symptoms, and, 3) insufficient electrocardiographic data. The electrocardiographic data may be insufficient either in the number of precordial leads taken, misinterpretation of atypical finds or an insufficient number of serial electrocardiograms. These points will be illustrated by several examples.

Case 1. W.C.T., a 32-year-old white male millwright, was first seen on 8-10-50 complaining of burning pain in the lower and mid-chest region intermittently of approximately one year's duration, but almost constant for the preceding week. This pain was attributed by the patient to excessive gas. It was worse about 30 minutes after meals and was particularly aggravated by tomatoes and onions. Formerly, smoking would produce a similar type of pain so that the patient had stopped smoking about eight months prior to his first visit. At times the pain radiated to the left side of the chest and to the left subscapular region, left elbow, and wrist and was associated with slight dyspnea. He had been under the care of a physician for "stomach trouble," was taking an antacid powder which gave some temporary relief, and he had been placed on a soft diet. Mild hypertension had been diagnosed in the past. On physical examination the blood pressure was 145/90. The remainder of the physical examination was within normal limits. Fig. 1 shows the initial electrocardiogram. The significant findings are the absent R wave in V1,2,3 of the chest leads with small RV,5,6; late inversion TV1,2,3 and the left arm unipolar lead and diaphasic TV4,5. Under direct questioning the patient revealed that the substernal pain was frequently brought on by walking or working after a heavy meal and relieved by rest. This information had not been elicited previously and heart disease had not been diagnosed. He was hospitalized and treated for acute myocardial infarction, localized electrocardiographically in the anteroseptal region. Recovery was uneventful and the patient was later able to return to work although he continued to have some mild angina promptly relieved by nitroglycerine. An electrocardiogram one month later showed the T waves to be normal. Thirteen months after the initial diagnosis of myocardial infarction there was a sudden onset of severe substernal pain lasting two hours. He was admitted to the hospital, but died about 20 minutes after arrival. An electrocardiogram taken one week before the last myocardial infarct showed the T waves entirely normal with the absent RV1,2 and small R3 as the only result of the previous myocardial infarct. This case illustrated two important points: First and most important, the misinterpretation of the patient's symptoms for approximately one year during which time he was treated for a stomach disorder rather than coronary disease, and second, the importance of multiple precordial leads. The three standard limb leads failed completely to reveal the myocardial infarct whereas it was clearly shown in the precordial leads. The second electrocardiogram taken one month after the acute infarct and the tracing a year later showed evidence of the previous injury only in the precordial leads.

[†] From the Department of Medicine, Medical College of Alabama, and the Seale Harris Clinic, Birmingham, Alabama.

* Assistant Professor of Medicine, Medical College of Alabama. Cardiologist, Seale Harris Clinic, Birmingham, Alabama.

Case 2 W.L.R., a 45-year-old white male businessman, was first seen on 10-23-50 because of recurrent severe substernal pain of four days' duration. The initial pain was described as a feeling of distention in the epigastric and lower substernal regions radiating to both shoulders and about half way down the inner aspects of both arms. This was so associated with slight nausea and a feeling of gaseous distention of the abdomen which forced him to loosen his belt. The first episode of pain lasted about one hour and occurred several times before admission to the hospital, each time lasting 30 minutes to an hour. An electrocardiogram Fig. 2, taken at the patient's home on 10-22-50 the day before admission to the hospital, was interpreted by his physician as negative because of the absence of a Q2 and, strictly speaking, a Q3, although T3 was deeply inverted. Physical examination was entirely negative. The blood pressure was 140/82. An electrocardiogram several days later showed the classical changes of posterior infarction with Q2,3, AVF, inverted T2,3 AVF and a rather sharply upright T1. In this case the electrocardiogram was misleading because the findings were not exactly those described as being "typical" of posterior infarct. While this first electrocardiogram cannot be said to be absolutely diagnostic of posterior infarction, it was so strongly suggestive that patient should have been considered as having that diagnosis until serial tracings either proved or disproved it. *A single electrocardiogram never rules out myocardial infarction* and, if the history is strongly suggestive, the patient should be so treated while serial electrocardiograms are being recorded for at least a week.

Case. 3. J.O.R., a 54-year-old white male foreman, was first seen on 5-21-51 because of precordial and substernal pain 24 hours prior to this visit. His past history revealed that he had not felt well during the preceding month because of diarrhea and general weakness. On the day before admission, while at church, he suddenly felt faint, nauseated, and this was followed by vomiting. He lay down and about 15 minutes later developed a moderate precordial and substernal aching, constricting type pain. The pain was not severe but did radiate to the left arm. The blood pressure at the time was 106/72. He was immediately taken to a physician's office who prescribed demerol and atropine with only partial relief; but nitroglycerine gave prompt relief and he was advised to rest in bed 24 hours or until the next day and then report for an electrocardiogram. Physical examination showed the blood pressure to be 90/60. Remainder of the examination was essentially negative. The electrocardiogram is shown in Fig. 3. The significant findings are an elevated ST segment in lead 3 and AVF with depressed ST AVL V2,3,4,5,6 of the precordial leads. He was immediately hospitalized with a diagnosis of posterior myocardial infarction and an electrocardiogram shortly after admission showed inverted T2, more deeply inverted T3, and inverted TAVF. In this case history was atypical in that weakness, faintness and nausea preceded the development of substernal pain. The prompt relief with nitroglycerine suggested coronary insufficiency rather than actual myocardial infarction; however, the duration of the pain more strongly suggested the latter and the electrocardiogram confirmed this.

Case 4. W.T.S., a white male lawyer, was first seen on 10-4-49 because of left shoulder pain with constriction in the upper substernal region associated with a fall in blood pressure and profuse sweating. He was seen almost immediately after the onset of pain and his physician administered morphine with relief of the pain. At the time of examination, approximately four hours after the onset of pain, the blood pressure was 110/75. The remainder of the physical examination was normal. An electrocardiogram at that time is shown in Fig. 4. The significant findings are slight elevation of ST2,3 and AVF. These findings were considered borderline, but because of the history a diagnosis of myocardial infarction was made the patient was hospitalized for treatment. An electrocardiogram on 10-24-49 showed late inversion of T2,3 and AVF. These serial changes were consistent with a diagnosis of posterior infarction and confirmed the previous clinical diagnosis. Again it should be pointed out that an electrocardiogram taken soon after acute myocardial infarction may not show diagnostic changes for several days to a week and sometimes longer. A followup tracing on 2-2-51 showed a return of the electrocardiogram to normal with no evidence of the previous infarct.

Case 5. T.A.N., a 50-year-old male businessman, was admitted to the hospital on 4-29-51 because of severe epigastric distress, sudden in onset, of about 3 hours' duration. The pain was described as severe, constant, and localized at the level of the umbilicus, with occasional slight radiation to the substernal region. Past history revealed that he had noted epigastric discomfort intermittently for three years but during the preceding three weeeks the pain had become much more severe. Two weeks before admission a peptic ulcer had been diagnosed by his physician and confirmed by x-ray. On physical examination the blood pressure was 160/100. The heart and lungs were not remarkable and there was mild epigastric tenderness. The initial impression was peptic ulcer with possible small infarction. Hypertensive vascular disease with possible angina was also diagnosed. The patient seemed to improve on an ulcer program and the electrocardiogram was not taken until 5-5-51. The tracing is shown in Fig. 5 and is consistent with posterior infarction. The following day he developed severe mid and high epigastric pain requiring large doses of narcotics for relief; there was some low substernal radiation of the pain but no radiation to either arm or the neck. Under direct questioning at this time, he stated that prior to hospitalization the pain could be brought on by effort and relieved by rest. A repeat electrocardiogram on 5-25-51 showed changes consistent with the evolution of a posterior myocardial infarct.

His course in the hospital was rather stormy with recurrent pain of coronary origin requiring the frequent use of narcotics. On 5-26-51 there was a sudden onset of severe pain and he expired a few minutes later. An autopsy revealed marked atherosclerosis of both coronary arteries with thrombosis and occlusion of the anterior descending branch of the left coronary artery, old infarcts of the septum and apex, and recent infarction of the left ventricle. The stomach and intestinal tract were normal.

In this case, two factors were responsible for the delay in recognizing myocardial infarction: First was the atypical location of the pain, and second, the supposed diagnosis of peptic ulcer by x-ray. The important relationship of the pain to exercise prior to his hospitalization was not clearly elucidated until the severe episode of pain six days after admission to the hospital. The delay in taking the electrocardiogram and the apparent response to ulcer therapy were, of course, contributing factors.

These cases illustrate several important points. The diagnosis most commonly confused with myocardial infarction was that of

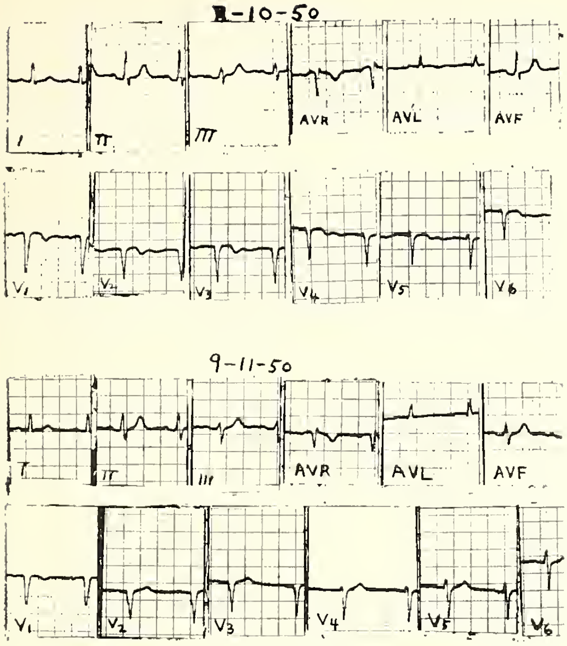

[illegible]-10-50
I
II
III
AVR
AVL
AVF
V1
V2
V3
V4
V5
V6
9-11-50
I
II
III
AVR
AVL
AVF
V1
V2
V3
V4
V5
V6

Fig. 1

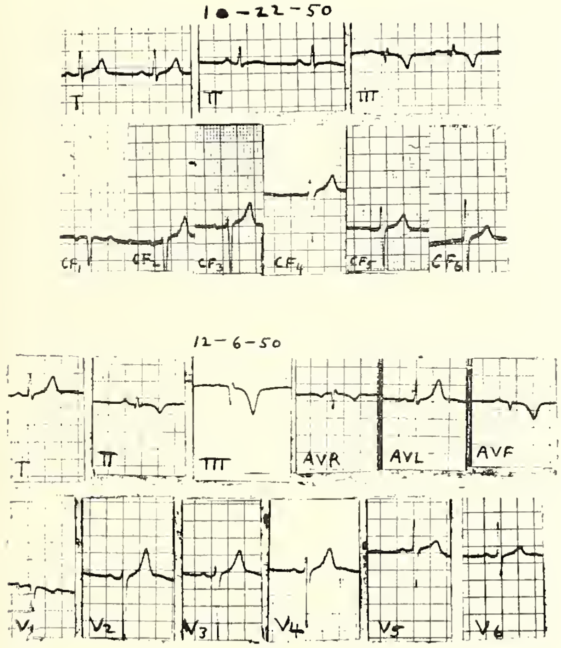

10-22-50
I
II
III
CF1
CF2
CF3
CF4
CF5
CF6
12-6-50
I
II
III
AVR
AVL
AVF
V1
V2
V3
V4
V5
V6

Fig. 2

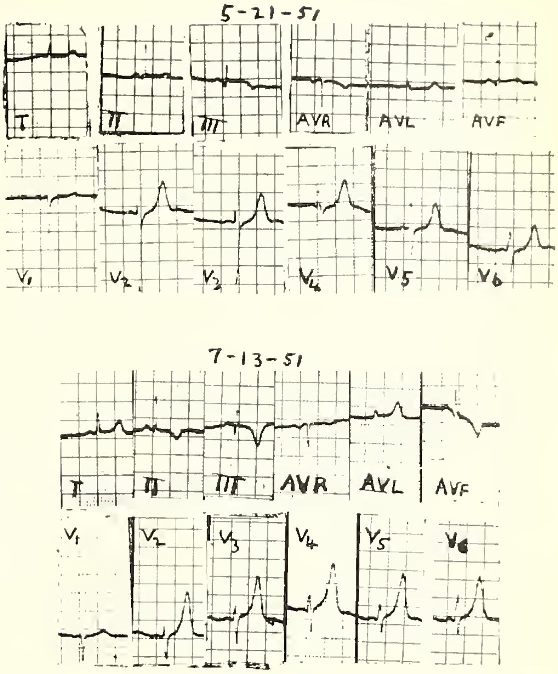

5-21-51
I
II
III
AVR
AVL
AVF
V1
V2
V3
V4
V5
V6
7-13-51
I
II
III
AVR
AVL
AVF
V1
V2
V3
V4
V5
V6

Fig. 3

upper abdominal disease. In the cases reported here, peptic ulcer was initially considered in two of the cases. In fact, both had been under treatment by other physicians for several months with such a diagnosis. Two factors are principally responsible for such errors in diagnosis. First is the atypical distribution of the pain, and second, the relative young age of the patient. A careful history will usually cast much light on the proper diagnosis while it is still in the stage of coronary insufficiency and before myocardial infarction has occurred. It should be remembered that coronary insufficiency is more likely to occur when the stomach is distended by food or gas, and that exercise tolerance is diminished under those conditions. A careful inquiry should be made for aggravation or precipitation of the pain by effort and its relief by rest. Although coronary disease is less common than peptic ulcer under the age of 40, it nevertheless occurs with sufficient frequency that it must always be considered in the differential diagnosis of high epigastric distress. The same may be said of cholecystitis with or without cholelithiasis and pancreatic disease. The author[1] is well aware of the fact that upper abdominal disease may frequently simulate coronary insufficiency including electrocardiographic changes,[2,3,4,5] but would like to point out that these changes are usually transient, confirmed to the ST or T waves and do not produce the typical findings in the QRS complex of myocardial infarction. They may occur without pain. The electrocardiogram, furthermore, may change from normal to abnormal and back to normal without the usual serial evolution associated with myocardial infarction.

The second factor which may confuse the

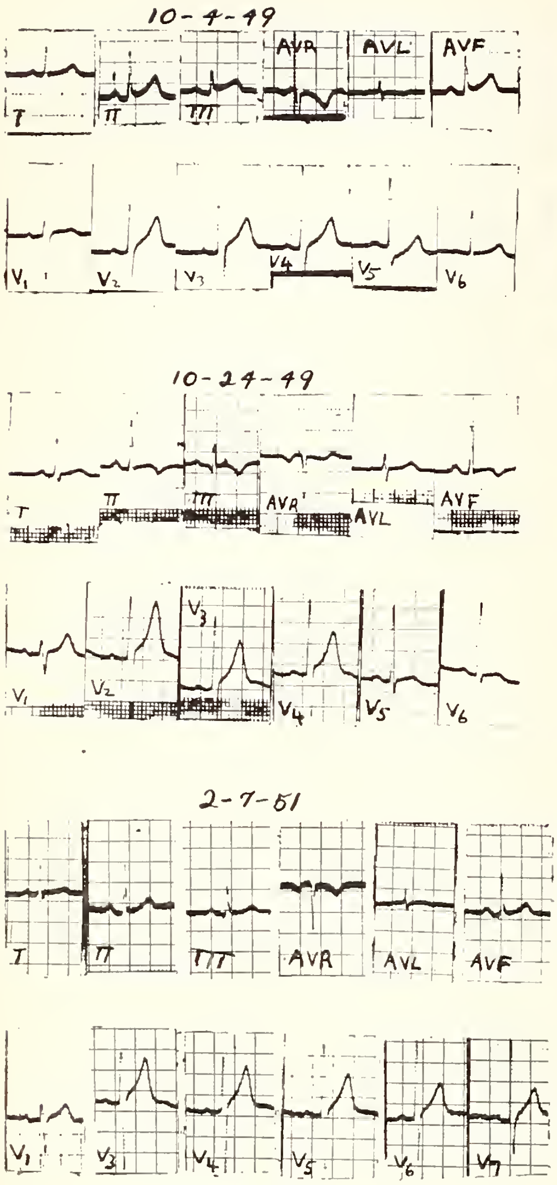


Fig. 4

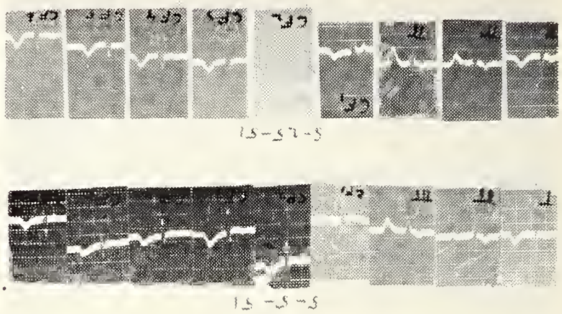


Fig. 5

early diagnosis of myocardial infarction is the insufficiently appreciated fact that during the initial stage, damage to the heart muscle may not be reflected in the electrocardiogram. This is more likely to occur when the infarct does not extend through the myocardial wall. A single electrocardiogram is insufficient to rule out myocardial infarction. It is therefore necessary to take repeated tracings for at least a week following the onset of pain before one can be reasonably sure the electrocardiogram is not likely to develop signs of infarction. If during this period of time non-specific changes occur even though they are not typical of infarction, they must be regarded as evidence of an active process in the myocardium; and, if the suspected clinical diagnosis is that of myocardial infarction, they may be considered as confirmatory.

I would like to emphasize at this point the necessity of taking multiple precordial leads. The question is sometimes asked "Which leads are best?" It is not possible to answer this question without knowing the location of the infarct and if one knows the location of the infarct, then the electrocardiogram is unnecessary. The number of leads necessary is that number which gives the information desired. This means six precordial leads routinely in cases of suspected myocardial infarction, for antero-septal infarcts may not show changes in the standard limb leads and frequently, if small, may not cause any abnormality in positions 4, 5, 6 of the precordial leads. It is occasionally necessary to take precordial leads an interspace higher than those recommended in order to demonstrate a high anterior infarct. The left arm unipolar lead may suggest infarction when the other leads are normal, and in these cases precordial leads an interspace higher will frequently provide the correct diagnosis.

Lastly, it must be recognized that in some cases myocardial infarction will not be associated with definite electrocardiographic changes. In these cases it is better to treat the patient as a myocardial infarct, but it can be assumed the area of damage is small, and prolonged bed rest is not necessary.

CONCLUSION

The common errors in the early diagnosis of myocardial infarction are 1) confusion with upper abdominal disease; 2) a lack of a high index of suspicion in patients of the younger age group; 3) a failure to appreciate the fact that electrocardiographic changes may not appear for several days to a week or longer; 4) a failure to take a sufficient number of precordial leads. The diagnosis should be made by the correlation of a careful, detailed history and electrocardiogram, and not by electrocardiogram alone. If the history is suggestive of myocardial infarction, the patient should be confined to bed for a minimum of a week during which time serial electrocardiograms should be taken and interpreted for any change in the wave forms. These should be correlated with the patient's story. Exercise tolerance tests and extensive diagnostic studies should not be performed if there is reasonable evidence to suggest myocardial infarction. If the patient has a normal electrocardiogram at the end of two weeks, one can assume that no large area of infarction has occurred and prolonged restriction of activity and bed rest are not indicated.

BIBLIOGRAPHY

1. Hodge, G. B., and Messer, A. L.: The Electrocardiogram in Biliary Tract Disease and During Experimental Biliary Distention. Surg., Gyn., and Obst. 86:617, 1948.
2. Moschowitz, E.: The Electrocardiogram in Uncomplicated Disease of the Gallbladder and the Changes Induced by Operation, J. Mt. Sinai Hosp. 10:632, 1944.
3. Clark, W. E.: Electrocardiographic Changes in Active Duodenal, Gallbladder Disease, Am. Heart J. 29:628, 1945.
4. Weiss, M. M., and Hamilton, J. E.: The Effect of Gallbladder Disease on the Electrocardiogram, Surgery 6:893, 1939.
5. Gottesman, J., Casten, D., and Beller, A. J.: Changes in the Electrocardiogram Induced by Acute Pancreatitis: A Clinical and Experimental Study, J.A.M.A. 123:892, 1943.

Medical Induction Using Intravenous Pitocin[*]

David M. Switzer, M. D.[†]
Jackson, Mississippi

A RELATIVELY NEW method of medical induction is being presented, in which intravenous pitocin drip is used. Blair Bell was the first man on record, in 1909, to posterior pituitary extract to stimulate uterine contractions. Almost 100 years earlier Stearns[1] wrote of using ergot in "lingering labor". Of course, the drugs were unstable and variable in strength. Pituitrin was used for a time, then discarded because of the catastrophic results. In more recent years it has become standardized and again used with variable success in aiding the parturient woman.

We all know the various methods of using pituitrin and pitocin — both by themselves and in conjunction with other forms of induction. The intramuscular method is probably the most widely used today. But, because of the tissue in which it is deposited, there have been many failures, and some ruptured uteri. Intranasal administration, again, has proved unsuccessful because of the inability to regulate dosage accurately. Yet, in the hands of some, beautiful results have been obtained with each type. We could spend the entire evening in discussing the various methods of its use.

However, with the idea of Page[9] in some experimental studies in 1943, and Hellman[2] of Johns Hopkins Hospital in 1946, there was brought into existence a new form of usage for pituitrin and pitocin. This idea, the intravenous method, has been the subject of much debate. The latest papers [3,9] indicate that the new method is here to stay.

We usually agree that it is seldom indeed that any two men, not closely associated, can obtain similar good results in the use of any drug or technique. Where one man has marked success, others may fail miserably. Thus, we must evaluate the methods in the light of our knowledge of the drug, the patient and the equipment at hand.

First, what do we want the drug to do? It must be potent enough to cause the uterus to contract regularly, and in a normal manner. The drug must be standard in strength, so that it can be regulated according to the doctor's idea of the patient's needs. It must be able to be controlled at will. And, most important, it must not be too dangerous to the mother or infant.

We must keep in mind that, in order to answer all these requirements all the time, and in the hands of every doctor, is a huge task for any drug. And, I'm frank to admit that pitocin does not answer it completely. Yet, in the hands of us people who claim to be better than average practitioners it should give no trouble when handled carefully. It is my purpose this evening to present a method which has been used with excellent success during the past several months.

---

[*] Read before the Mississippi Association of Obstetrics and Gynecologists, Greenwood, Miss., Dec. 6, 1951.

[†] Obstetrics and Gynecology Department
The Long Dees and Edwards Clinic

First, let us look at the patient. She should be a good candidate. That is, she should be afebrile, less than 35 years old, and having had fewer than four pregnancies[1]. These three things have a greater tendency toward causing a rupture than any other. Other factors which will tend to cause failures are: long duration of labor — long duration of labor prior to therapy — and improper pelvic findings at the time of induction[2]. Best results are obtained in the woman whose blood picture is normal (anemia tends toward weak, ineffectual contractions). She should be in the prime of obstetrical life (18-28). She should be at term for the best results, and in my opinion, should not be subjected to an induction without adequate reasons. Multiple pregnancy should have been ruled out, along with breech presentations, unless the toxicity of the patient demands immediate intervention. Other methods may prove more valuable. However, since these latter are not a part of the purpose of this paper, we will not linger on them.

At the time of the entrance into the hospital, the woman is properly prepared, including a cleansing enema, and then a sterile vaginal examination is done, granted that previous examinations (including x-ray when indicated) had ruled out cephalo-pelvic disproportion. The cervix should not be thick and long[5], but should admit the tip of an examining finger without difficulty. The head should then be palpated and balloted to be sure that, if not already engaged, it is engagable. I don't rupture membranes at this point, because I feel that it isn't safe. This is in contrast to some good men who induce labor solely by the art of membrane rupture. On the other hand, I feel that stripping the membranes is advantageous when indicated[6]. Having again ruled out clinical disproportion, and ascertaining that foetal heart rate and tone are normal, the patient is then sedated by whatever method is used by that particular physician. I generally use three grains of nembutal for this purpose. Thirty to forty-five minutes later, the pitocin drip is started, using 10 minims of pitocin to 1000 cc's of 5 per cent glucose in distilled water. (Pitocin is the preferred drug, as it does not cause an elevation of the blood pressure). By using the Cutter I.V. apparatus, 15 drips are equivalent to 1 cc. So by I.V. administration, one can accurately measure the amount of pitocin being given at any time, ranging from half-minim per hour upward. When so standardized, one can accurately pre-determine the amount of pitocin being placed into the blood stream, and thus having direct effect on the uterine musculature, at any time during the procedure.

Within from thirty seconds to four minutes after the drip is started, the uterus begins to contract. This is a very vital period, which MUST be very carefully watched. In nearly every case I have observed, the uterus goes into a strong contraction. If the drip has not already been stopped, it should be stopped then, for otherwise the uterus stays contracted for from three to five minutes. Two things could occur if this were allowed to happen. First, foetal anoxia and perhaps death would result if the contraction were prolonged[5]. Second, if the contraction were severe enough, a ruptured uterus could result. How may these two things be prevented? First, although we seldom use it, we could keep a can of ether and a mask available to use if needed to stop the contraction. As soon as the needle is placed into the vein and the drip started, you who have used some form of this technique know that possibly two to five cc. of the fluid enters the vein while the adhesive tape is being used to secure the needle in place. The second precaution, then, is that it should be made routine to clamp the tubing off to such an extent that only a few drops be allowed to enter the circulatory system. Otherwise, the very forceful uterine contractions will result. The obstetrician, not the nurse, should then check the foetal heart tone and rate again, and wait for about five minutes to see if the small amount of fluid injected would cause a uterine contraction. It usually does. After the first contraction is over, and again foetal heart tones checked, the drip is opened to allow from 15 to 25 drops of the pitocin solution per minute to flow into the vein. If prolonged contractions are the result, the drip should be stopped for a period of 15 minutes before resumption. Usually at this time, the sensitivity to the drug has been lessened. Nevertheless, at 15 to 30-minute intervals, the foetal heart tones, duration and strength of uterine contractions must be checked. If any untoward results are obtained, the drug should be stopped.

What results are to be expected? In the case of the woman who is brought into the hospital because she is overdue and still not in labor, the contraction may be expected to begin at a rate of approximately every 3 to 3½ minutes, lasting approximately 30 seconds. Within a period of approximately one half hour, the contractions will be seen to increase in severity and duration. With the woman who is being given a pitocin drip because of primary or secondary uterine inertia, the contractions will increase in intensity and duration from the onset. When there is activity of the uterus (as manifested by Braxon-Hicks contractions) prior to injection, an increased frequency is very common from the onset. In the case of the ineffectual uterine contractions which are light, in character, more-or-less generalized, with no particular site of predominance of force, the dominance will be seen to be localized to the fundus. Within the first twenty minutes of induction, if an increased fundal dominance, together with contractions of increased intensity and duration are noted, it is a very favorable sign that the induction will be successful[7].

After the drip has been in progress for an hour or more, the patient should be checked for signs of engagement of the head. If this is found, it is then my policy again to do a sterile vaginal examination. With the usual finding of a cervix which is beginning to dilate, and with the presenting part engaged, I believe it perfectly safe now to rupture the membranes. Rupturing the membranes at this stage of labor has a definite tendency to cause a hastening of labor, with more rapid termination[5]. Prior to this time, however, since any form of medical induction is not infallible, rupturing of the membranes may result in a uterine infection if a considerable time elapses between the rupture and termination of labor. Another reason why hasty rupturing of the membranes are frowned upon is that it may lead to a prolapsed cord, or to a compound presentation, as occurred once at the State Charity Hospital not too long ago.

Some questions have arisen, as to how long to continue the drip. This depends on the progress and condition of the patient, and the judgment of the obstetrician. The greatest disadvantage to intravenous pitocin induction insofar as the patient herself is concerned, is that the patient must lie perfectly quiet, with the arm extended on an arm board. This becomes quite uncomfortable after a time. So, when the attendant thinks that the patient is now on her own, the drip may be clamped off for a few minutes. If the contractions continue unabated, with no diminution of force, the attendant may then discontinue the drip. If, on the other hand, the attendant wishes to let the drip continue, and thus increase the force, he may let the drip continue, even to the point of carrying the patient into the delivery room with no damage being done. I believe it should be stopped at latest, just prior to transfer to the delivery room. I usually stop it a half hour or more prior to that time, since my aim has already been accomplished.

SUMMARY

Advantages

Available wherever good obstetrics is practiced.

Standardized administration assures standardized absorption directly into the blood stream.

When the drip is stopped, the drug is stopped. Continuous administration at a predetermined rate.

Less discomfort to patient than constant intramuscular injections.

Less danger of uterine rupture than with other methods.

Disadvantages

Disadvantages of pituitrin and pitocin in general.

Tendency on the part of some obstetricians to allow a nurse to set up and follow through on the induction.

REFERENCES

1. Stone, M. L. Am. Jour, Ob&Gyn. Vol. 59, No, 1,
2. Hellman, M. L. Am. Jour, Ob&Gyn, Vol, 57, No, 2,
3. Dare, A. F. Am. Jour, Ob&Gyn. Vol, 62, No, 3,
4, Winterringer, J. R. Am. Jour. Ob&Gyn, Vol, 61, No. 3.
5. Lubin, Samuel Am. Jour. Surg. Vol, 81, No, 5,
6. Reycraft, J. L. Am. Jour, Ob&Gyn, Vol, 61, No, 4,
7. Reynolds, S. R. M. Am, Jour, Ob&Gyn, Vol, 59, No. 5.
8. Lubin, Samuel, Am. Jour. Ob&Gyn, Vol. 58, No, 4,
9. Nixon, W. C. W. (London) Am, Jour, Ob&Gyn, Vol. 62, No. 5.

Inguinal Hernia—(Direct and Indirect Hernia Repair)

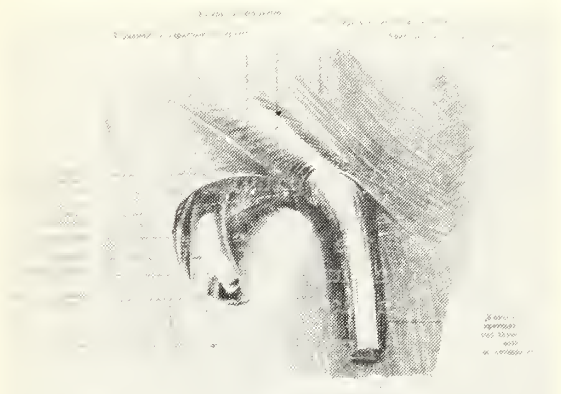
Lawrence W. Long, B.A., M.D. F.A.C.S. - F.I.C.S.†
Jackson, Mississippi

THE OPERATION for repair of an inguinal hernia is one of the most common operations performed in both large and small hospitals in this country. In teaching hospitals, it is one of the first major operations to be turned over to young surgeons. Strangely enough, the operative procedure is still far from standardized. There are innumerable variations, many of which bear the names of distinguished surgeons. Each variation has been prompted by dissatisfaction with the results previously obtained. The results following the use of a new technique are always an improvement over previous results. Considering the great number of techniques that have been described one cannot help but wonder whether the better results are due to the new technique or to the fact that the author has made himself and those exposed to his teaching a better surgeon. Stimulating interest and studying one particular subject will always improve performance.

INGUINAL HERNIA - DIRECT AND INDIRECT
(A method of repair designed to prevent recurrences as well as cure the present defect.)

Inguinal hernia occurs in all ages and all sexes and in all races. Volumes have been written on history, etiology, incidence and methods of repair and we refer you to the many libraries for such information. We believe that our composite method offers the best possible chance for a permanent repair of either direct, or indirect, inguinal hernia since it is based on two cardinal principles: 1) closure of the defect and 2) reinforcement of the closed defect.

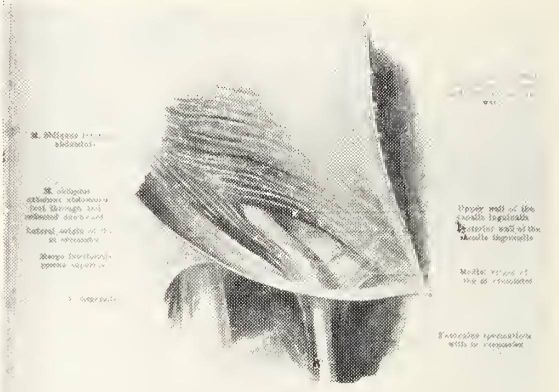
Fig. 1



376. Right anterior abdominal ring and fossa ovalis in the male.

Fig. 2

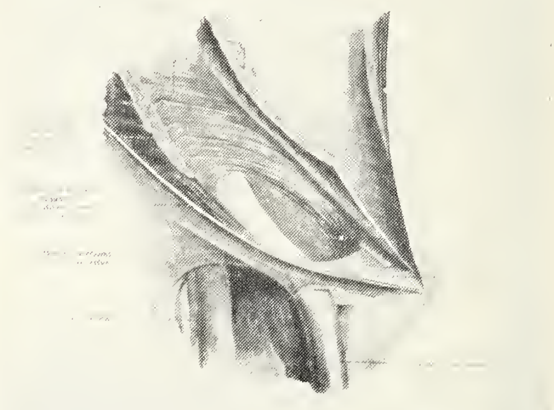
Figure 2 shows the abdominal ring and fossa ovalis in the male.



377. Right inguinal canal in the male

Fig. 3

Fig. 3 gives us an anatomical view of the inguinal canal through the internal oblique in which we note the posterior wall.



378. Right inguinal canal in the male

Fig. 4

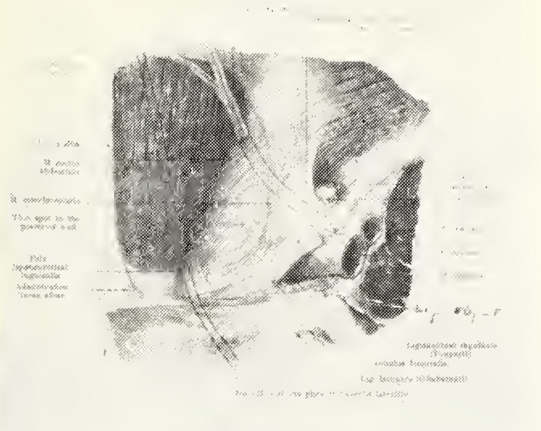
Figure 4 shows us the third layer of the inguinal canal with particular reference to the thin spot in the posterior wall floored only by peritoneum and fibers of the transversalis fascia.

The success of any technique is partly measured in the recurrence rate for inguinal hernias. It is our desire to stimulate your thought toward a change for the better in whatever technique you are now using. We emphasize accurate closure of the internal ring, firm closure at the pubic symphysis and reinforcement of the transversalis fascia. We believe that foreign material will not hold muscle to fascia any longer than it takes for the suture to cut through the muscle.

---

† From the Department of Surgery of THE LONG, DEES & EDWARDS CLINIC, Jackson, Mississippi.

We believe that our method of repair is designed to prevent recurrence as well as cure the present defect.



379. Posterior wall of the right inguinal canal in the male.

Fig. 5

Figure 5 explains well to us the "thin spot" as well as the ligaments of Cooper and Poupart's that play an important part in the repair of the inguinal hernia and also in prevention of a recurrence.

The posterior wall of the inguinal canal is floored by transversalis fascia only, in its weakest point, bound by the falx, lacunare ligament (Gimbernat's), Hesselbach's ligament and the rectus muscle. The internal ring of course is the natural opening through the abdominal wall. Therefore we desire to close the internal ring and ligate the hernia sac high in an indirect hernia and transplant the neck of the sac beneath the rectus muscle, sewing the ligature of cotton through the external oblique as shown in figure 6. The sheath of the rectus muscle is incised longitudinally to allow both the internal oblique and the transversalis to move over toward Poupart's ligament more easily.

Next, it is our desire to use cotton also here and plicate the transversalis fascia, taking up all slack and reinforcing the weak spot in this manner, as shown in figures 7 and 8. The living fascia from the external oblique is used to fasten down the internal oblique to the shelving edge of Poupart's ligament and incorporate Cooper's ligament also with a Gallie needle, as shown in figure 9. The external oblique is then closed with catgut and the skin with dermal.

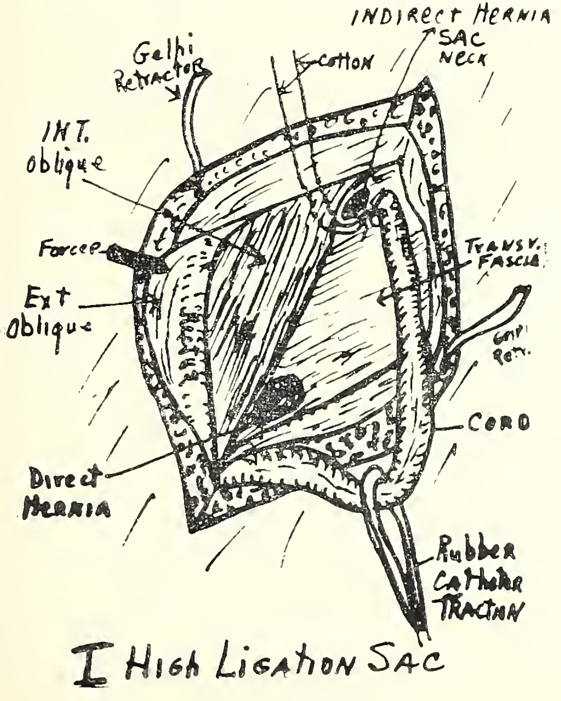

INDIRECT HERNIA SAC NECK
Gelhi Retractor
COTTON
INT. oblique
Forcep
Ext Oblique
TRANSV. FASCIA
Gelpi Ret.
CORD
Direct Hernia
Rubber Catheter Traction
I High Ligation Sac

Fig. 6

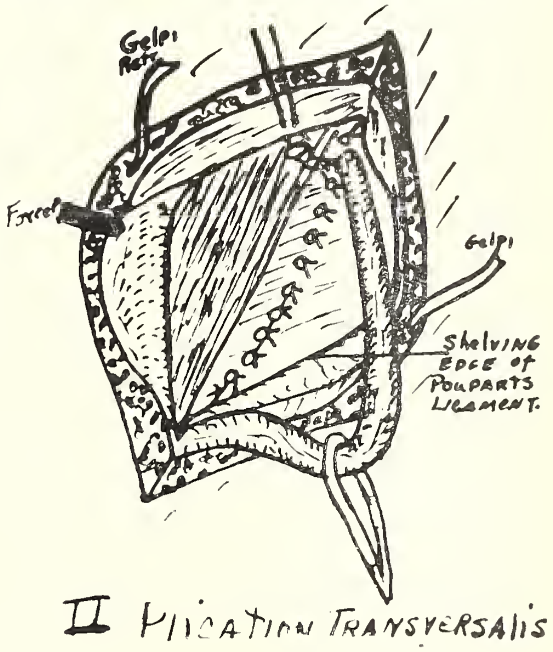

Gelpi Ret.
Forcep
Gelpi
Shelving Edge of Pouparts Ligament.
II Plication Transversalis

Fig. 7

In repairing a direct inguinal hernia, the sac is removed and the neck either ligated or plicated at the level of and with the transversalis fascia. The remainder of the operation

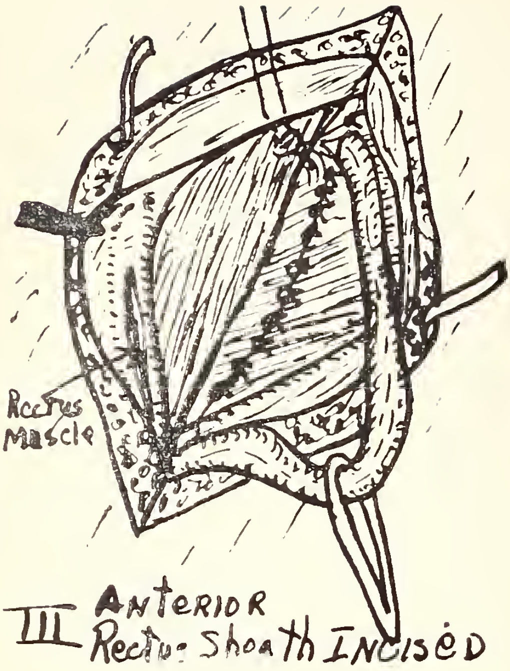

Rectus Muscle
III Anterior Rectus Sheath Incised

Fig. 8

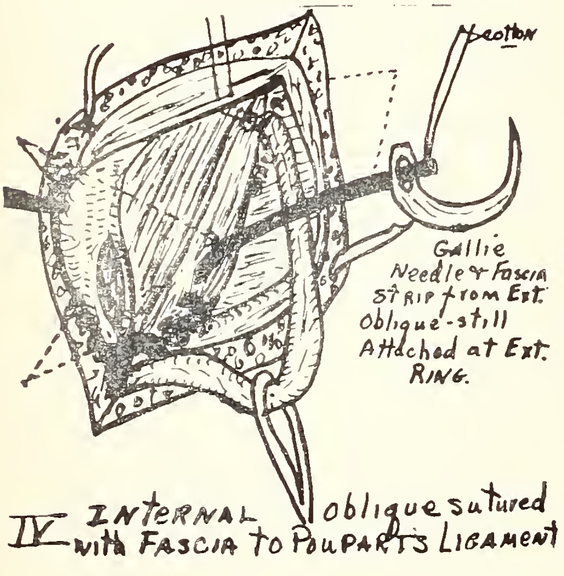

cotton
Gallie Needle & Fascia Strip from Ext. Oblique-still Attached at Ext. Ring.
IV Internal oblique sutured with Fascia to Poupart's Ligament

Fig. 9

is the same as in the indirect hernia repair.

We have repaired 85 inguinal hernias in this manner—59 white and 26 colored. Therefore 69.4 per cent have been white and 30.6 per cent colored; 75 per cent have been males and the ages of the cases have ranged from 2 to 86 years, as shown in figure 10. We have had one recurrence in the female, only on one side of a double hernia. The 85 patients have presented 103 direct and indirect inguinal hernias and a 0.97 per cent recurrence rate which we believe to be somewhat better than the average of cases that are carefully followed, as these cases have been since 1946.

INGUINAL HERNIAS OPERATED ON BY THIS TECHNIQUE

	White	M.	F.	Colored	M.	F.	Total	M.	F.	Ages
1946 - 1951	59	46	13	26	18	8	85	64	21	2 to 86
Percent	69.4	76	24	30.6	69	31	100	75	25	

WHITE 69.4 PER CENT

Sex	Indirect	Direct	Ages	Recurrence	Single	Double
Male	30	10	4-86	0	36	4
Female	16	3	2-68	1*	10	9*
Total	46	13	2-86	1	46	13

COLORED — 30.6 PER CENT

Sex	Indirect	Direct	Ages	Recurrence	Single	Double
Male	17	1	16-48	0	16	2
Female	8	0	18-55	0	5	3
Total	25	1	16-55	0	21	5

Fig. 10

The types of recurrences are well illustrated by the study done at Ann Arbor, Michigan, by *Zawacke and Thieme, which consists of (A) sharply localized recurrence at the internal ring, (B) above the lateral to the internal ring. (See figure 11). The average age of the 105 recurrences studied was 53 years and the average time of recurrence was

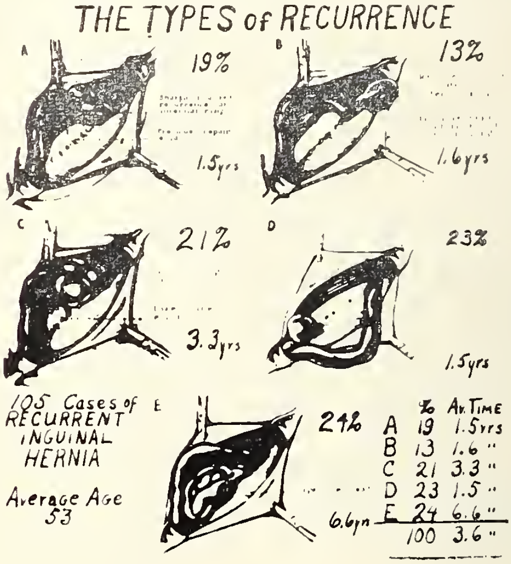

THE TYPES of RECURRENCE
A
19%
1.5yrs
B
13%
1.6yrs
C
21%
3.3yrs
D
23%
1.5yrs
105 Cases of RECURRENT INGUINAL HERNIA
Average Age 53
E
24%
6.6yrs
% Av. Time
A 19 1.5yrs
B 13 1.6 "
C 21 3.3 "
D 23 1.5 "
E 24 6.6 "
100 3.6 "

Fig. 11

---

*A.M.A. Archives of Surgery, Oct. 51, Vol, 63, No, 4, 3.6 years following repair with the following percentage in each group, (A) 19 per cent, (B) 13 per cent, (C) 21 per cent, (D) 23 per cent and (E) 24 per cent. Therefore the direct hernia occurrence or recurrence was 47 per cent while the indirect recurrence was 53 per cent. These cases in our opinion were well followed and worked out by the authors, but do not agree with the thought we have had in the past in regard to recurrences since we have seen mostly direct hernia recurrences following a previous operation for an indirect hernia.

This operation prevents recurrence because it does the following:

1. High ligation and transfixation of the sac in an indirect inguinal hernia.
2. The plication of the transversalis fascia remedies the defect of a direct inguinal hernia, which usually occurs close to the pubis and may occur after the repair of an indirect inguinal hernia if this procedure is not carried out.
3. The longitudinal incision of the rectus sheath beneath the external oblique fascia permits the internal oblique to slide over easily and if it is thinned out, then it aids in the additional fortification of the posterior wall of the inguinal canal.
4. The use of the fascia strip from the external oblique eliminates the necessity of securing fascia by another incision and will live and grow in its own habitat, reinforcing the muscular wall at the point it was, or may become, weak.

Fig. 12

In conclusion, we believe that our composite method of repair does a better job of repair and prevention of recurrence than any we have witnessed.

SUMMARY

1. It has been our purpose and desire to stimulate your thought in the methods of repair of hernia in the inguinal region.

2. A brief review of the anatomy and the steps in the repair of inguinal hernias has been made.

3. Eighty-five cases with 103 direct and indirect hernias have been presented in which we have had a detailed follow-up for five years.

4. Our erroneous impression that the majority of recurrences occur on a direct hernia is corrected by the 105 cases presented in figure 11.

Sickle Cell Anemia an Hematologic Challenge*

George W. Rogers, B. S., M. D.
Gulfport, Miss.

The South is the home field for sickle cell anemia, and yet, the Southern physician is inclined to view this home product with some concern except when it appears in a dramatic guise. Since the sickle cell trait occurs in a rate of about eight per cent of the Negro population, and since our population here is about half Negro, it is obvious that we deal with nearly one potential case of sickle cell anemia in every twenty-five patients. True enough, only about two and one-half per cent of those showing the sickling trait ever exhibit clinical anemia, but that still provides a higher general population rate than many other subjects of medical discussion.

Anemias as a general subject must be scanned briefly, to picture the position, in that spectrum, occupied by sickle cell anemia. Since the symptoms of anemia, such as malaise, weakness, palpitation, pallor, etc., are due in general to a lowered oxygen-carrying potential of the blood, anemia may be produced by a lowered hemoglobin index within the erythrocyte, a reduction in the number of circulating erythrocytes, or more commonly both. Sickle cell anemia, however, does not occur from a lack of erythropoeitic activity, as does pernicious anemia, or from a lack of erythropoeitic raw material, as does hypochronic secondary anemia. There is no external drain upon the circulating cells and hemoglobin as in the anemia of hemorrhage. The fault lies within the cell, somewhat as in Mediterranean anemia, and congenital hemolytic anemia.

Sickle cell anemia is a congenital, hereditary, and racial characteristic. It is seen within the colored race so exclusively as to cast some aura of doubt over those cases which crop up periodically, reportedly appearing in the Caucasian. Reliable observers have made many of these reports, but I do not feel that there has been any diminution of evidence of the racial characteristics of the disease.

It appears typically in the young Negro, usually in the early years. I do not recall ever seeing a case make its first appearance any later than puberty. It is in this age group that the very high mortality rate in the crises appears, and it is the problem of passing these children through this valley of death which presents the challenge to the physician.

---

*Delivered at the eighty-third annual session of the Mississippi State Medical Association, May 1951, Biloxi, Miss.

Many hypotheses have been presented to explain the crises of sicklings which haunt the victims. The obvious explanation of a heightened erythrocyte fragility is not tenable. It has been conclusively shown that these cells can withstand lower concentrations of sodium chloride than can normal cells. The spleen has been incriminated here as in familial hemolytic anemia, but the relatively insignificant results from splenectomy do not bear out this explanation. Here, apparently, these cells are destroyed diffusely, throughout the histolytic system — not just within the spleen. So long as the pH of the blood remains more alkaline and the oxygen tension high, the cells are apparently not destroyed any more rapidly than normal cells. Without doubt, the sickling characteristic is a first stage in preparing the cells for histolytic destruction but this apparently must be brought about by preliminary relative acidosis and lowered serum oxygen tension.

About the only reasonable explanation for this selective destructibility has been offered by Pauling, Itano, Singer, and Wells. Their work was an involved physico-chemical study involving the polarity of solutions of hemoglobins from normal persons, persons with sickle cell anemia, and persons with the sickling trait, buffered at a pH of 6.9 under conditions of lowered oxygen tension. In this buffered solution, the hemoglobin of the individual with sickle cell anemia behaves as a positive ion, that of the normal individual as a negative ion, and that of the sicklemic as an apparently equal mixture of positive and negative ions. This certainly offers no comprehensible explanation for the physical change occurring in the cell's outline, but it does put the finger on the hemoglobin as being the basic fault.

As in every other disease, the diagnosis is not going to be made unless the condition is suspected. We must go farther than suspicion, however, because sickle cell anemia has no truly characteristic physical findings and has the unpleasant faculty of imitation of entirely too many other diseases. The mere listing of these is of no help. We must be prepared to make the extra effort of definitive laboratory investigation of every acutely ill Negro. In many instances, the symptoms of the crisis, whether abdominal, arthralgic, cerebral, or other, will appear before the blood count falls, so the presence of a normal red cell count will not rule out sickle cell crisis. Occasionally the sickle cells are apparent in the stained blood film, more often in the red cell counting chamber. However, the making of a sealed cover slip preparation or a sealed oxylated specimen will in most cases be necessary. Even after making these, some observation of the cells over a period of time is indicated to determine the rate of sickling. This should be paralleled by serial red counts.

When the diagnosis has been assured, what have we to offer the patient? Basically, the treatment is replacement of destroyed blood by transfusion of cells that will not be so readily destroyed. This should be accomplished in sufficient quantity, as determined and demonstrated by frequent blood counts. Since these crises are generally precipitated by acute infectious diseases, the primary infection should be combatted by whatever antibiotic measures are at hand. The one other measure that we feel we have done some good with in the past is the free use of oxygen. Our reasoning for this is purely empirical, but it would appear that since lowered oxygen tension produces sickling in vitro, which is reversible by increasing the oxygen tension, then, the same mechanism may operate in vivo. We have used this approach in only three crises, all in the same patient within the past two years, and can only offer it as a completely unsupported hypothesis.

Probably prophylaxis is as much in order here as in the very watchful handling of the rheumatic child. These children are as much disabled as the rheumatic, and the influence of streptococcal infection on the exacerbations is at least as well substantiated. We can see no contraindication to the prophylactic, constant administration of small doses of penicillin or sulfonamides after the excellent results obtained in the handling of rheumatic fever.

Rather than to attempt any statistical study of this disease, in the time allowed, I have instead selected one rather typical case that we are now seeing, as being illustrative of the points previously mentioned.

This child, a young Negro girl, now eleven years old, was eight when I first attended her. She had been first admitted to the hospital in 1945, with an acute respiratory infection, and the sickling tendency was found coincidentally in the routine blood examination.

She did not undergo a sickling crisis at that admission, but thereafter was inclined to easy fatiguability, frequent respiratory infection, poor development, and the usual chronically ill course as seen in this condition.

At her second admission in 1947, at the age of seven, the sickling was more pronounced, and more vigorous anti-infectious therapy was necessary, and the symptoms were of acute abdominal disease.

When I first attended the child, her mother had called me about a severe abdominal pain which the patient had developed rather rapidly, initially peri-umbilical, later shifting to the right lower quadrant, and accompanied by nausea. The child appeared seriously and acutely ill. She was pale, breathing rapidly and with some difficulty. The general examination was typical of acute appendicitis, except for the presence of an acute pulmonary infection, and a soft systolic apical murmur. After admission to the hospital, she was found to have an elevated white cell count with shift to the left, an only moderate anemia, and an elevated temperature. Sickling was apparent on the stained film and in the counting chamber, but sealed preparations were made, which resulted in about twenty to forty per cent sickling within one hour. She was treated by transfusion, oxygen, and antibiotics, and very uneventfully stopped sickling and recovered.

At her next admission, the onset was heralded by a respiratory infection, but her symptoms were entirely arthritic, with migratory swelling and arthralgia, nicely simulating rheumatic fever. Her laboratory findings were much as previously, and transfusion relieved the entire picture within about two days.

There was still a third admission, in which I felt that a crisis was anticipated and aborted by transfusion, never developing to the point of true acute sickle cell anemia.

After this, the child was put on a prophylactic dose of 100,000 units of buffered oral penicillin twice daily, and an hematinic compound liquid, mainly to insure adequate hematopoeisis. She since that time has improved her blood count, remained reasonably well and able to attend school, has had fewer respiratory infections, and has shown considerable improvement in nutrition.

(Note: After the preparation of this paper, on April 28, 1951, the child was re-admitted, again with an acute abdominal crisis, again simulating appendicitis, but with somewhat more upper abdominal pain, suggesting splenic infarction. The spleen and liver were palpable about two fingerbreadths below the costal margins. Again sickling was apparent on routine examination but a sealed formalin fixed, venous blood preparation was made for absolute confirmation. Again she was treated by oxygen, transfusions, and intensive penicillin therapy, and again she recovered uneventfully.)

This patient shows an interesting family history. On examination of both her parents and her one living grandparent, no sickling can be demonstrated. However, she has lost two brothers, both at the age of eight months, in sickle cell crisis. One sister shows a moderate sickling after twenty-four hours incubation, but has never had any spontaneous episodes of sickling. The remaining siblings are all free of disease. Both parents deny the occurrence of any similar illnesses or deaths in their immediate families.

As I have mentioned, no diagnostic physical findings are characteristic of sickle cell anemia. The tower skull is rarely seen, and this patient under discussion shows only lightly such a tendency. There may be some sabreing of the shins. The leg ulcer is a frequent complication in adult life, but is only suggestive, not diagnostic.

In summary, may I emphasize my conviction that adequate prophylaxis in known cases, an acute index of suspicion in unknown cases, and intensive therapy in proved crises will allow the attainment of adult life, with the greater chance of permanent remission in most of these afflicted children.

DISCUSSION

Dr. John B. Howell (Canton) — In opening the discussion I would like to thank Dr. Rogers for his very excellent presentation of a subject long neglected by most of us. I would like to stress his second conclusion on acute index of suspicion in unknown cases. A disease for which there is no very definitive therapy is one which is easier to neglect.

Dr. Rogers' use of oxygen in his cases of crisis I think has a very definite rationale. That sickling does occur in vivo due to lowered oxygen tension can be proved by the diagnostic method of Scriver and Waugh which places a rubber band around the finger from which the blood sample is to be taken and the slide read almost immediately.

Kimmelsteil reports in his survey of the literature that few conclusive reports of arterial thrombi can be found, which brings us to the conclusion that thrombi occur in the vessels where less oxygen loaded red cells are present.

Calender reported an interesting study concluding that transfused sickle transfusion and that the drop in number of red cells occurred more precipitously when oxygen was discontinued.

The dramatic picture presented by a patient with sickle cell anemia has in more than a few cases led to unnecessary operative procedures, which merely adds fuel to an already raging fire.

Ignoring the disease can bring us to many pitfalls. All of us agree that it is as important to know what not to do as to know what to do in medicine.

Sicklemia can be classed with lues and amebiasis in being a great imitator. To me the differential diagnosis is perhaps the most important side of the picture. In surgery it has been confused with the acute abdomen, appendicitis, intestinal obstruction, intussusception, perforation, ureteral colic and acute cholecystitis. Gallstones, incidentally, are reported to be common in individuals with sickle cell anemia. Fever, leukocystosis and jaundice are often present and it must be remembered that people with sickle cell anemia can have any of the aforementioned as signs and symptoms of the malady. Bone and joint manifestations simulate acute osteomyelitis and acute rheumatic fever. Aseptic necrosis with collapse of the head of the femur as well as the "hair on end" appearance in skull x-rays do occur. Leg ulcers also occur.

The urologist is baffled by the classic picture of nephrolithiasis with no evidence of stone on x-ray. Several cases of priapism are associated with the disease.

In internal medicine embolic phenomena such as cerebral accidents, purpura and splenomegaly; and anemia refractive to therapy by the usual methods. Cor pulmonale is also reported to be caused by sicklemia.

Sickle cell anemia begins in childhood, so the pediatrician comes in for his share of quandary.

I have not seen or read where pregnancy can simulate our subject but certainly the stagnation of blood adds to the anoxia to produce a crisis.

Suspecting the disease is stressed again.

THE MID-SOUTH.

The Mid-South Postgraduate Medical Assembly will hold its annual session at the Peabody Hotel, Memphis, Tenn., on Feburary 11-14. We are sure there is a good program on the way. In our last issue you saw a list of the exhibitors which indicates what they think of the Mid-South. The exhibitors in a very large measure finance the Association. Our essayists have their expenses paid, which has helped in securing very outstanding men. Last year several men spoke twice on the program, the time having been reduced from one hour to thirty minutes for each lecture.

The Mid-South offers a brief review of the very best and latest in medicine and surgery in a four-day course. It has taken the lead for this type of postgraduate work now for about twenty-five years, and has done the job well. The Peabody Hotel provides a wonderful meeting place, while Memphis holds its own as a fine medical center, one of the nation's best. It has one of the finest and most practical medical schools to be found anywhere. Hospitality and the fellowship of the doctors is not to be surpassed. No doctor can afford to miss this meeting.

Make your hotel reservation now and mark the days on the calendar. It will be good for you, for your fellow doctor, and for your clientele for you to attend the Mid-South. It is tops.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton .... Oxford
President
Dr. J. G. Thompson .... Jackson
President-elect
Dr. T. M. Dye .... Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. .... President
Greenville, Miss.
H. T. Smith .... President-elect
McGehee, Ark.
L. T. Carl, M.D. .... Vice-President
Jackson, Miss.
D. T. Owens, M.D. .... Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. .... Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

PREPAREDNESS FOR THE UNIVERSITY HOSPITAL

Lawrence W. Long, M. D.
Jackson, Mississippi
GUEST EDITORIAL

The construction of the Medical School and University Hospital should begin in 1952. Its planning is very important and its building will take time. While this is going on, we should also turn our thoughts toward further preparedness. The hospital filled with its 350 patients will be necessary for a fine four-year medical school. There will be many technicians of various sorts needed to staff the school and hospital. It is time that we call this fact to the attention of the governor and legislature. Large numbers of technically trained people will be needed and when the doors of this institution are opened, it is too late to look around for them. Many of our present hospitals find it hard to fill their vacancies of technically trained personnel now. If we do not think and plan, then it may come to pass that those needed may be "pirated" away from the rural hospitals where they are badly needed and short in numbers now.

What type of people do we need to train? We need to plan these next few years to train

1. Nurses
2. Social Service Workers
3. Anesthetists
4. X-Ray Technicians
5. Laboratory Technicians
7. Dietitians
6. Medical Technicians
8. Surgical Technicians
9. Physiotherapists
10. Nurses' Aides
11. Orderlies
12. Hospital Maids

The number we will need in our present expanding hospital system and the number we will need in our new University Hospital is sizeable.

How can they be trained in the next few years?

Nurses' training schools in each of our five present charity hospitals and each hospital of more than 75 beds throughout the state is possible.

Schools of x-ray, laboratory and medical technicians, as well as anesthetists, can be adequate in both Vicksburg and Jackson Charity hospitals.

Medical and surgical technicians and physiotherapists could be trained in a school organized at the Meridian Charity Hospital.

Dietitians and nurses' aides could be trained in a school founded at our State Sanatorium.

Operating room supervisors and floor supervisors could be trained in a school at Natchez, while the Charity Hospital at Laurel could train medical and surgical technicians and supervisors.

Each of the five present charity hospitals can serve a very useful purpose in serving the state and its preparedness program for the New University Hospital in having organized by the authority of the legislature, such schools to supply the state's future needs. This type of plan will be good insurance that there will be adequately trained personnel to operate our new four year medical educational plant and its teaching hospital. Then too, no better investment can be made by the state in its youth than to technically train its high school graduates in a fine profession that will enable them to earn a livelihood. We owe this to our youth that they be offered this training and not have to leave our state to secure it some other place.

Let us all stop and think so that we can prepare for the educational program which rightly should be under the supervision of the Institutions of Higher Learning and its trustees in my opinion.

I believe that it is worthwhile to talk with your legislator and our governor on this matter now since action should be taken at this session of the legislature if our Medical School and University Hospital will profit by it and our population in general benefit from it.

WE MIGHT TRY

Since we have made very little progress in preventing and controlling the spread of polio, and since its inherent cause remains a secret, it seems to us that any man's plausible theory merits proving. A few months ago we published a paper by Dr. Marsh Pitzman of St. Louis, Mo., who advanced the theory that polio might be spread by milk. To quote him:

"Specifically during July and particularly August—our worst pasture months throughout the northern three-quarters of our U.S.A.—average country cows graze poisonous weeds, *Then the milk from single cows or small herd may become dangerous to humans which is the generally recognized cause of white snake-root poisoning. Obviously other diseases, including mysterious and justly dreaded polio, might well be caused by the grazing of other poisonous weeds.*

"For reasons detailed heretofore, the poison most strongly suspected is the widespread jimson weed (datura stramonii). As is generally known by physicians its poisonous action is due to an admixture of atropine and hyoscine alkaloids; which in overdose produce **both** fever and muscular paralysis, and in fatal overdose a terminal respiratory paralysis.

"But this suggested rechecking of milk, cream and butter supplies is broader than any particular theory regarding what could be wrong with said definitely proved dangerous milk; as it concedes a specific virus of polio might be spread exclusively via this route."

Assuming that these poisons might very well be eliminated in the interim of a day or two between the time the patient is first seen by his local physician and he is admitted at a polio clinic, Dr. Pitzman's suggestion that urinalysis for alkaloidal poisons be routinely made by doctors and health officers who are the first to see a patient suspected of having the disease, might be tested for light.

News and Comment

THOMAS MELVILLE DYE, M. D.

RESIGNATION WRITES FINIS TO FAITHFUL SERVICE

The resignation and retirement from office in the Mississippi State Medical Association of Thomas Melville Dye as secretary writes the conclusion to a brilliant chapter in the annals of the Association and organized medicine in Mississippi. The substance of this chapter is service; its narrative is gentleness flowing from a moral strength divinely bestowed but carried with humility; it is phrased with warmth and kindness, punctuated with courage and determination.

Dr. Dye's fruitful years of service reflect with accuracy his fruitful life. For more than a half century he has continued to dedicate himself to our noble and honorable profession. Measuring his success in terms of love and friendship, he is outstanding among men. His years have drawn about him no twilight of life, for his vigor, keen humor, ready smile, and warm hand-clasp give no hint of his journey's length through life.

The reluctant acceptance of Dr. Dye's resignation by the Association by no means severs the bonds strengthened by years of work together. His counsel will be sought, and his presence among us will continue to add immeasurably to the store of intangible treasure found only where men of his stature walk.

ANNOUNCEMENT OF RESIGNATION OF OFFICER AND APPOINTMENT OF INTERIM INCUMBENT

Effective December 1, 1951, I have as president of the Mississippi State Medical Association, reluctantly accepted the resignation of Thomas M. Dye, M. D., Clarksdale, Mississippi, as secretary of the Mississippi State Medical Association.

Concurrently with the acceptance of Dr. Dye's resignation, I have appointed George E. Twente, M. D., Jackson, Mississippi, to the office of secretary of the Mississippi State Medical Association to serve the unexpired term vacated by the resignation.

It is my wish that this announcement serve as official notification of the action taken to the Council.

James G. Thompson, M. D.
President, Mississippi State
Medical Association.

Approved: E. C. Parker, M. D., Chairman of the Council; M. Q. Ewing, M. D., Member, Council and Executive Committee; H. C. Ricks, M. D., Secretary of the Council and Executive Committee.

FROM DR. DYE

The Mississippi State Medical Association,
My dear Friends:

Last May in Biloxi I tried to impress upon the Nominating Committee how impossible it was for me to carry on longer as your secretary. They either didn't believe me or else disregarded my letter to them.

My failing faculties make it necessary that I quit. It is not fair to you to try to continue, so I have tendered my resignation to President Thompson and he has appointed Dr. Geo. F. Twente of Jackson as my successor.

I have enjoyed working with you for thirty-five years and with one or two exceptions you have been most kind and patient with me. I thank you and I will continue to love you.

I hope to meet you in Jackson next May. In the meantime I say, God bless you.

Your friend,
T. M. DYE.

Dec. 11, 1951.

DR. TWENTE APPOINTED TO SUCCEED DR. DYE

Dr. Tom Dye, Clarksdale, resigned effective December 1, 1951, as secretary of the Mississippi State Medical Association.

Acceptance of Dr. Dye's resignation by the Association president, Dr. James Grant Thompson, Jackson, was announced by the MSMA Central Office in Jackson. The announcement disclosed that Dr. George E. Twente, Jackson, had been appointed to fill the unexpired term of office.

Dr. Dye was born in DeSoto County, the son of the Reverend Thomas W. and Ellen A. Dye. He attended Millsaps College and, later, Tulane University, where he received his M. D. degree.

Beginning private practice in Florence, he located successively at Sherard and Longwood before establishing residence at Clarksdale. In 1901, Dr. Dye was married to the former Miss Mary Johnson of Jefferson County. Six sons were born to the couple.

In 1909, Dr. Dye was elected First District Councilor of the Mississippi State Medical Association. He served seven years in this office until his election as president in 1916.

He served continuously as secretary for more than three decades, having been elected in 1918.

Dr. Dye holds membership in the Clarksdale and Six Counties Medical Society, the Mississippi State Medical Association, and the American Medical Association, in addition to church and other organizations.

HISTORIES AVAILABLE

The History of the Mississippi State Medical Association has again been placed on sale to members, according to Dr. L. T. Carl, state historian.

The volume, Dr. Carl said, is the second edition of the History and was published in 1949. Dr. James Grant Thompson, Jackson, then historian, is the author-editor.

The book is attractively finished in heavy plastic covers and is printed on enamel paper. It is mechanically bound with aluminum post binders to facilitate addition of future supplements in the same covers.

"A careful record of purchasers of the History is being maintained in the central office", Dr. Carl said, "These purchasers will receive preferential service when the next supplement is published, thus insuring maintenance of an up-to-date volume."

The book is currently offered to members for $2.75, postage paid, and to all other purchasers for $5.00. Purchasers are asked to mail checks to Rowland B. Kennedy, Executive Secretary, Mississippi State Medical Association, 507-8 First Federal Building, Jackson. Shipment will be made on the day the order is received.

WILKINSON-AMITE COUNTIES MEDICAL SOCIETY

The regular quarterly meeting of the Wilkinson-Amite Counties Medical Society was held at Centreville, in the assembly room of the new annex to the First Methodist Church, Thursday evening, December 13. An excellent attendance was noted. In the absence of Dr. O. H. Thornhill, Dr. R. J. Field presided.

Following a delicious turkey dinner, an interesting and informative program was presented: Dr. Ray Biggs, medical director of our State Tuberculosis Sanatorium, discussed the diagnosis and differential diagnosis of tuberculosis. His exposition, including x-ray pictures of the chest, indicated that more progress has been made within the past decade in the diagnosis, treatment and possible cure (arrest) of tuberculosis than has been made since its first discovery — some four thousand years B. C.

Dr. Lee Reed, director of thoracic surgery at the Sanatorium, presented stereoptical slides of many of the outstanding lesions of the chest; discussing their various surgical treatment with possible results. The recognition of the value of lung surgery holds out very substantial hope and encouragement to the many victims of chest pathology.

The society was honored with the presence of the following guests: Dr. and Mrs. David Malan, Dr. and Mrs. Danberry, Dr. and Mrs. E. M. Toler, the Rev. and Mrs. Roy Clark and Dr. and Mrs. Paul Jackson (our meeting would not be complete without the presence of Paul and Mittie).

W. T. Thornhill, M.D., Reporter.

NEUROPSYCHIATRIC MEETING

Dr. Harold W. Sterling, manager, has announced that the fourth annual Neuropsychiatric Meeting will be held at the Veterans Administration Hospital, North Little Rock, Arkansas, on February 28 and 29, 1952. Guest lecturers who have already indicated that they will participate include the following: Dr. Leo H. Bartemeier, president, American Psychiatric Association, Detroit, Michigan; Dr. Daniel Blain, medical director, American Psychiatric Association, Washington, D. C.; Vice Admiral Joel T. Boone (M. C.) retired, chief medical director, Veterans Administration, Washington, D. C.; Dr. Paul C. Bucy, neurosurgeon, Chicago, Illinois; Dr. D. Ewen Cameron, president elect, American Psychiatric Association, Montreal, Canada; Miss Hester B. Crutcher, director of social work, New York, State Department of Medical Hygiene, Albany, New York; Dr. E. H. Cushing, assistant chief medical director, Research and Education Service, Veterans Administration, Washington, D. C., or representative; Dr. Edwin F. Gildea. head of the Department of Neuropsychiatry, Washington University School of Medicine, St. Louis, Missouri; Dr. O. Hobart Mowrer, Research Professor of Psychology, Department of Psychology, University of Illinois, Urbana, Illinois; Dr. Philip Thorek, surgeon, Chicago, Illinois, Dr. Harvey J. Tompkins, chief, Psychiatry and Neurology Division, Veterans Administration, Washington, D. C.; and Miss Mary Jane Ward, Evanston. Illinois, author of **Snake Pit.** Vice-Admiral Boone will be the speaker at the dinner meeting Thursday evening, February 28, while the remaining guest lecturers listed above will participate in the scientific sessions throughout the two-day period of the meeting. In addition there will be approximately ten clinical demonstrations and thirty technical exhibits having to do with the hospital itself.

There will be no change for registration nd attendance of all interested professional personel will be welcome subject only to limitations of seating facilities.

Further information may be obtained by writing to Dr. Ewin S. Chappell, director of Professional Education, Veterans Administration Hospital, North Little Rock, Arkansas.

CONFERENCE ON RURAL HEALTH

The Seventh National Conference on Rural Health sponsored by the American Medical Association, will convene in Denver, Colorado, February 29, and March 1, 1952. The theme this year is "Help Yourself to Health". The program is being built around community self-help reliance.

The sessions will be held in the Shirley-Savoy Hotel. Lecturers include such men as Dr. F. S. Crockett, chairman of the Council of Rural Health; Dr. John W. Cline, A.M.A. President; Dr. Kenneth Kaisch, Philip, South Dakota; Dr. Charley J. Smyth, Denver, Colorado; Dr. Henry Thode, Fort Collins, Colorado; Dr. Harlan English, Danville, Ill.; Dr. Edgar J. Fisher, Richmond, Va.; Dr. J. R. Rodger, Bellaire, Mich.; Dr. Fred C. Hubbard, North Wilkesboro, N. C.; Chester G. Starr, Jefferson City, Mo.; and several eminent names in national agricultural organizations.

DEATHS

DR. C. F. BURKHARDT

Dr. Charles Frederick Burkhardt, 83, native of Grant County, Ky., retired physician and surgeon who has resided in Biloxi 17 years, died November 6, at the Biloxi Veterans' Administration Hospital where he had been for a week.

Dr. Burkhardt had spent the winters in Biloxi since 1925 and took up his residence on the Coast nine years later.

After completing grammar and high school he took up his studies at Central Normal College of Danville, Ind., after which he was a teacher for some years. He graduated from University of Louisville, Ky., medical department.

Dr. Burkhardt was elected county superintendent of schools of Gallatin, Ky., in 1890 at the age of 22, holding this office for eight years, resigning in 1897 when he moved to Illinois.

DR. J. L. HALL

Funeral services were conducted on November 19 for Dr. James L. Hall, brother of two Jacksonians and dermatologist at the Lutheran hospital in Vicksburg since 1937, who died Saturday at a local hospital following a short illness. He was 44.

Dr. Hall was a graduate of the University of Tennessee Medical School where he was a member of Phi Chi, medical fraternity He did post-graduate work in the field of Dermatology in St. Louis and was Dermatologist at Lutheran Hospital since September 1937.

During World War II Dr. Hall served as Major in the Medical Corps with overseas duty in Africa, France and Corsica.

He was a member of Issaquena-Sharkey-Warren Counties Medical Society, and State Medical Association and the American Medical Association. He was a member of the Baptist Church.

Dr. Hall is survived by his wife, Mrs. Eleanor Brown Hall; one daughter, Eleanor; one son, Douglas Hall; his mother, Mrs. Emma Hall; and two brothers, Douglas Hall and Garland Hall, both of Jackson.

DR. STEVE M. COLEY

Services for Dr. Steve M. Coley, former head of the X-ray department of the Memphis Methodist Hospital were held in Jackson, November 2.

Dr. Coley was 67 and since 1944 had lived here where he continued in part-time practice until several years ago. He was born at Ripley. He moved to Memphis in 1918 after having established a hospital at Houston.

Dr. Coley served at Memphis Methodist Hospital from 1921 to 1944.

He leaves his wife, two daughters, Mrs. Ferris Brandt of Jackson and Mrs. O. K. Cannon of Biloxi; two sisters, Mrs. Fannie Goolsby of Ripley and Mrs. Frank Conner of Memphis; and a brother, Lee Coley of Memphis.

DR. J. E. HEWITT

Funeral services were conducted November 17 for Dr. J. E. Hewitt, prominent and beloved Pike County physician, who died at his home in Summit. Dr. Hewitt, 70, was the brother of Dr. W. A. Hewitt of Jackson.

Dr. Hewitt, a native of Amite County, was a member of a prominent south Mississippi family and had lived most of his life in this section of the state.

He was a graduate of Memphis Medical College and had a large practice here until he was forced to retire because of failing health. He was a member of the Baptist church and a Mason.

Survivors include his wife, Mrs. Mary Ethel Dewitt, Summit, five sons, Woodrow Hewitt, McComb; Claude Hewitt, Natchez; Hilton Hewitt, Tulsa, Okla., Dr. I. Lee Hewitt, McComb; James Hewitt, Summit; a sister, Mrs. Mattie Burris, Hattiesburg; five brothers, Dr. W. A. Hewitt, Jackson, Dr. B. J. Hewitt, McComb, B. E. Hewitt, Summit, Harold Hewitt, and Judge F. D. Hewitt, McComb.

DR. RAY RHYMES, JR.

Dr. Ray Rhymes, Jr., prominent surgeon at the Riley Hospital in Meridian, died of a sudden heart attack November 28. He was about 40 years of age.

Dr. Rhymes was the son of the late Mr. and Mrs. Ray Rhymes, Sr., his mother being the former Miss Lollie Riley of Tupelo.

He was the grandson of W. F. Riley, Sr., of Tupelo and Meridian, and a nephew of Jim. Wilber, Harris and Dr. Gayle Riley. He leaves his wife and two brothers.

MISSISSIPPI STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

A FULLER LIFE FOR LATER YEARS*

J. W. Dugger, M.D.

As an Association, I must concede we have grown up. Today's program schedule is interesting to compare with that of our first annual meeting, held in Jackson back in May, 1937. Those who enjoy reminiscing and reflecting upon our public health achievements should find great satisfaction in looking over the program of the first annual meeting of county health officers of Mississippi in October, 1913. Problems which concerned this group most were such things as malaria, hookworm and rural sanitation, safe milk, food, and water supplies, typhoid fever, school sanitation, and morbidity and mortality reporting. We have come a long way in our realization of some of these early public health goals, although you will recognize our work is far from finished in solving some of the problems with which these early sessions dealt.

The evening address of the 1913 session was given by Dr. W. A. Evans, who had achieved national prominence for his successful efforts to insure a safe milk supply for Chicago, where he was serving as health commissioner. Dr. Underwood was listed on the program to speak on "How May Vital Statistics Be Used in Enlightening the Public on Health Problems," for which the program says he was allowed ten minutes, and Dr. H. F. Garrison, Sr., spoke on "The Sanitary Privy", which subject had a prominent place on all the early programs. Such colorful figures as Dr. Joseph Goldberger talked on Pellagra at the 1916 meeting, Dr. L. L. Lumsden talked on the Typhoid Problem, and Dr. W. S. Leathers gave a four-year account of the public health activities of the Board of Health, as his presidential address before the Association in 1914. The Rockefeller Sanitary Commission had just launched its great campaign to eradicate hookworm disease and among those chosen to initiate this far-reaching program were Drs. Whitfield, Boswell, Dedwylder, and Applewhite — all of whom were real public health pioneers in our state, and history will so acclaim them. Those were rugged days when we had no good roads and very meagre transportation facilities to reach the people with what was to be the beginning of a new day in public health. With so much to be done, these pioneering workers tackled the job with true missionary spirit. There was a genuine feeling for public health work that almost amounted to patriotism. Too many people were dying too young of diseases that could be prevented. The challenge to do something about this was very real and the success which followed the two decades thereafter can be attributed in large measure to the native ability and kindly understanding and sympathy for people and their welfare, which characterized the individuals who laid the foundations for our public health programs. We need in this modern era to rekindle that spirit to do something for somebody, forgetting self, and rededicating our efforts toward the building of healthier and happier communities. As I have pointed out, our work is far from finished.

As we put our hearts into attaining important public health objectives, the years slipped by, almost without our realizing it. Only as we look about us for some of the old, familiar faces do we realize the imprint that time has made. With the conquest of most epidemic diseases, man's average lifespan has been prolonged into the 60's, with the result that a considerable portion of our population is made up of ages at the two extremes of life — the young and the old. The increasing number of people in the older age groups poses new problems — social, economic, and public health — and the public health aspect cannot escape our attention and concern.

Geriatrics, the stepchild of medicine, is finally beginning to be accorded the attention it deserves. Growing medical interest in geriatrics has been stimulated by knowledge that we are becoming a nation of middle-aged and elderly persons and that, if present trends continue, 40 per cent of our population will be over forty-five years of age by 1980.

Attendant to rapid growth of our population beyond median age of life is a corresponding increase in chronic illness, disability, degenerative diseases, and physical and mental impairment. These facts point up the wisdom of giving geriatrics alert and earnest consideration; if the trend continues, the age of the aged is coming, if it is not already here. This is the challenge of increasing years added to life expectancy.

---

*Presidential Address delivered before the Mississippi Public Health Association, Jackson, Mississippi, December 10, 1951.

In terms of medical practice, geriatrics is not a specialty like obstetrics, orthopedics, and others based on anatomic limitations or therapeutic technics. It is, actually, a point of view or attitude of mind alert to the processes and consequences of aging, senescence, and senility. Because of this, geriatrics embraces all of the specialized fields of medicine and is, preferably, referred to as geriatric medicine.

Most diseases can and do occur at any phase of life span, but there exists a group of diseases, the frequency of which increases sharply after the peak of maturity is reached. Chronic and progressive disorders of senescence which create most of the problems peculiar to geriatric medicine are: circulatory and renal diseases associated with arteriosclerosis and hypertension; metabolic problems including diabetes mellitus, thyroid inadequacy, obesity, gout, and climacteric; arthritic disorders; neoplastic diseases.

The object of geriatric medicine is to add breadth and depth, rather than mere length to life. An attitude of prophylaxis throughout the patient's lifetime and especially during the critical fifth and sixth decades of life is essential if geriatric medicine is to assist mankind to realize fully the vast and splendid potentialities of man.

Constructive medicine for mature adults offers most hope for the future geriatric. Application of the periodic health inventory and consultation during the two critical decades from forty to sixty will do much to keep patients near their maximum in health and vigor.

At least three requirements are basic in promoting progress in development of geriatric medicine. These are: acquisition of a more intelligent conception of aging and adoption of a more realistic attitude toward aging and the aged; direction of scientific study and research toward the health guidance of men and women throughout the years of middle and advanced age.

The basic of health guidance in advancing years is periodic health examination, with continuous medical direction and supervision. Such an examination is especially important to both men and women throughout the active and productive period of life from 35 to 60 years of age.

The idea behind health guidance for geriatric patients is the advisability of attempting to construct greater health in the apparently well individual who, though not ill, is by no means at his optimal level of vitality. For such efforts the term constructive medicine may be applied.

Constructive medicine for mature adults offers great hope for the future of geriatrics. If, during the two critical decades from forty to sixty, people can be kept near their maximum in health and vigor, there will be little cause for anxiety over premature disability and protracted invalidism in the years that follow. Procedures through which constructive medicine may be applied in the later years are the periodic health inventory and consultation. Such inventory must be comprehensive, individual, and functional in its analysis of the patient.

It is, of course, impossible to prevent all illness and all injury from accidents. But, if constructive medicine is wisely employed to improve the intrinsic biologic vitality of geriatric patients, it will lessen the detriment from such exposures and contacts.

Health construction is particularly significant in the latter part of life. The principle that the outlook in an acute illness in a geriatric patient is predicated just as much upon the state of health in the patient prior to the acute illness as upon what treatment is applied at the time, is worthy of re-emphasis. The physican must never assume that an older patient becoming acutely ill had anywhere near maximum health prior to his acute illness. All the complex problems of diagnosis, treatment, and prognosis are affected profoundly by the pre-existing state of health. This constructive medicine attempts to keep as near the optimum as possible.

The periodic health examination and health consultation should cover: present defects; present physical hygiene; mental hygiene; and predictable future problems. Best results can be expected only if the following criteria are fulfilled. The patient must take the initiative in seeking guidance; cooperate fully in diagnostic studies and actually follow advice received. The physician must have considerable diagnostic skill; be patient and unhurried in order to achieve thoroughness; understand humanity and the psychosomatic aspects of medicine; be aware of the changes due to aging; and appreciate the concept of constructive medicine.

The starting point of this management is the periodic health examination. Here by a careful history one can discover important factors influencing health. The family history will reveal any familial tendencies toward certain diseases such as cancer, diabetes, anemia, or those of the cardiovascular system. The personal history will indicate the patients' type of work, and, if there are associated industrial hazards, steps may be taken to eliminate them. Habits will be discussed and corrected if indicated. The history of past illnesses or injuries, particularly the ones having a crippling effect, is elicited. The physical and laboratory examinations may aid in the discovery of malignancy, heart failure, anemia, diabetes or arteriosclerosis in the earliest phases before they become clinically significant.

The physician must advise this group of patients about the importance of a nutritionally adequate diet. At present the diet considered best for the aging is one high in protein, moderate in carbohydrate and low in fat. The vitamin content should be higher than average and may well be supplemented by a vitamin made by a reputable pharmaceutical firm. The optimum diet has not been determined and needs further investigation. Overeating with resulting overweight increases mortality 1 per cent for each pound over normal weight. Weight reduction (when necessary) should be encouraged early.

Another aspect of health guidance in maturity pertains to work and play, which should be properly balanced. Work is most essential. The individual derives the greatest satisfaction from it when it is constructive in nature. The majority enjoy their work; if not, at least they can tolerate it because the end result gives them either leisure or the material things they desire. When work is enjoyable and constructive, it usually provides relaxation. Play is work completely lacking in responsibility. It affords rest when balanced with work, and when taken as exercise out-of-doors, is especially valuable.

The question arises as to how often such periodic health consultations should be repeated. While there is no dogmatic answer to this question, an annual inventory suffices for most geriatric patients. The advantages of encouraging the patient to report annually to the same physician are obvious. Of particular value is the opportunity to contrast findings with those observed on previous occasions and thus obtain insight into the rate of change, whether due to aging or to lowly progressive disease.

Aside from the obvious value of the periodic health inventory in permitting early detection and treatment of disease, this phase of constructive medicine opens the way for planned cultivation of those elements which can enrich the geriatric patient's later years of life. Medical knowledge cannot stop the aging processes, but it can aid the patient to grow older intelligently.

The primary object of medical practice is to improve health, not merely treat disease. In older individuals, gradually and progressively disabled by degenerative disorders, medical interest must be focused more closely upon the patient who has the disease than upon the abnormality itself. This is particularly pertinent to degenerative diseases because of their tendency to overlap one another, and because they all impair health by interfering with the nutrition of parenchymal cells through alterations of the intercellular matrix. Prevention of disease in geriatric patients is not enough.

Physicians and public health workers can do much to guide geriatric patients toward continued and improved health and efficiency, but they cannot supply motivation for the effort required on the part of the patient. As Dr. E. J. Stieglitz points out: "We are entering upon an Age of Age. Let us make the best of it. If further aging comes to mean continued growth, we will succeed in enriching life immeasurably. If aging is permitted to mean arrest of progress and stagnation, the second forty years mean rusting and rotting. Life is change and one of the changes is that of aging. Aging is living. The time to start building health and happiness into the later years is now."

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

PEDIATRICS

RELATIONSHIP OF ABILITY TO FEED AND MATERNAL ATTITUDES TOWARD BREAST FEEDING

Niles Rumely and Michael Newton
Philadelphia, Pa.
Pediatrics 5:869-75, May 1950

Ninety-one mothers were interviewed shortly after delivery to ascertain their attitudes toward breast feeding. Independent judges divided the attitudes into three categories on the basis of written records of the interview.

Of the mothers who expressed positive attitudes toward breast feeding, 74 per cent had enough milk by the fifth day after delivery to make formula supplementation unnecessary. Only 35 per cent of those who expressed doubtful and 26 per cent of those who expressed negative attitudes toward breast feeding had enough milk to make formula supplementation unnecessary by the fifth day.

Mothers with positive attitudes gave a larger average amount of milk on the fourth day, reported slightly more signs of let-down, and used nipple shields less frequently than the mothers with negative attitudes. Mothers with positive attitudes reported that their babies had less difficulty sucking and less frequently refused the breast, but more frequently refused the bottle than those mothers with negative attitudes.

The course of lactation in the mothers with doubtful attitudes, although upon the whole more like that of the negative group, did follow in some ways that of the positive group.

There are probably at least three psychosomatic mechanisms which influence the course of lactation, so that the relationship between the adequacy of milk and the mothers' attitude has an understandable physiologic basis. These include the effect of regulating sucking stimulation on blood flow, and the effect of the letdown reflex on the expulsion of milk that has already been secreted.

The practical implications of this study are to emphasize the importance of building up positive attitudes in the mother toward breast feeding if an abundant milk supply is desired. It is not enough to educate the mother into saying "They say breast feeding is better," because such mothers failed to have enough milk. The attitude must be a more positive one than this and must involve the mother's personal feelings.

Whether such positive attitudes toward breast feeding can actually be built up is a question which needs consideration. Attitude toward breast feeding is not necessarily an isolated phenomenon, but may be related to the woman's whole attitude toward children.

COMMENTS: by Dr. Harvey F. Garrison

We feel that this article simply opens up the old question that we have discussed for many years. The pendulum is beginning to swing back now toward breast feeding. Some of the ultra-modern mothers who thought it was nicer to feed a baby on a bottle are beginning to realize their mistake, thanks to the teaching and urgent solicitation on the part of the pediatrician and the obstetrician This is a very interesting article on this subject. May we have more of them.

See program of the Mid-South opposite page
206

Woman's Auxiliary

OFFICERS

President	Mrs. George W. Owen	Jackson
President-Elect	Mrs. Richard Clark	Hattiesburg
First Vice-President	Mrs. W. H. Anderson	Booneville
Second Vice-President	Mrs. Willard Waldron	Jackson
Third Vice-President	Mrs. I. C. Huggins	Jackson
Recording Secretary	Mrs. C. C. Hightower	Hattiesburg
Treasurer	Mrs. J. D. Simmons	Cleveland
Parliamentarian	Mrs. V. B. Philpot	Holly Springs
Corresponding Secretary	Mrs. P. R. Greaves	Jackson

COMMITTEE CHAIRMEN

Program	Mrs. T. A. Baines	Jackson
Research and Romance of Medicine	Mrs. I. J. Newton	Greenville
Legislation	Mrs. J. G. Thompson	Jackson
Doctor's Day	Mrs. L. J. Clark	Vicksburg
Nurse Recruitment	Mrs. S. B. McIlwain	Pascagoula
History and Archives	Mrs. Harvey Garrison, Sr.	Jackson
Revisions	Mrs. J. R. Williams	Houston
Budget	Mrs. Stanley Hill	Corinth
Memorial	Mrs. Joe Rogers	Oxford

COUNCILORS

First District	Mrs. George Archer	Greenville
Second District	Mrs. R. L. Wyatt	Holly Springs
Third District	Mrs. A. E. Brown	Columbus
Fourth District	Mrs. J. K. Avent	Grenada
Fifth District	Mrs. H. C. Ricks	Jackson
Sixth District	Mrs. Guy Vise	Meridian
Seventh District	Mrs. C. R. Jenkins	Laurel
Eighth District	Mrs. R. B. Zeller	Hazlehurst
Ninth District	Mrs. M. M. Snelling	Gulfport
Preventorium	Mrs. Henry Boswell	Sanatorium
Today's Health	Mrs. S. L. Bailey	Kosciusko

NORTHEAST MISSISSIPPI AUXILIARY

The meeting which comes around in December to Tupelo is the annual highlight of the Northeast Mississippi Auxiliary. Entertained by the doctors' wives of Tupelo at the country club, the attendance was particularly good. Mrs. George W. Owen of Jackson, state president, brought a report of the Chicago conference of presidents and presidents-elect and discussed important agenda for the year. She urged the participation of the unit auxiliaries with their medical societies in sponsoring as many of the AAPS Essay Contests as possible, giving and subscribing to "Today's Health", and having study programs on medical defense in case of attack.

The tea table, magnificently covered with an imported lace cloth and appointed with silver candelabra and massive Christmas centerpiece, was presided over by Mrs. R. D. Kirk, Mrs. L. C. Feemster, Mrs. L. L. McDougal, Mrs. J. C. Green, and Mrs. A. J. Stacy. Mrs. Stacy poured, assisted by the others in serving an array of pain surprises and Christmas cookies.

Two talented Tupelo musicians, Mrs. Finis Ewing and Mrs. Heber Simmons, regaled the group with a number of duo piano selections.

At the business session, presided over by Mrs. L. B. Morris of Macon, the following new officers were elected to take office in March: president, Mrs. S. B. Platt of Columbus; president-elect, Mrs. H. G. Waldrop of Booneville; first vice-president, Mrs. Carl Feemster of Tupelo; second vice-president, Mrs. C. M. Roberts of New Albany; third vice-president, Mrs. H. H. McClanahan of Columbus; fourth vice-president, Mrs. B. W. Crockett of Fulton; secretary-treasurer, Mrs. M. Q. Ewing of Amory; and parliamentarian, Mrs. E. K. Guinn of Okolona.

LOWNDES COUNTY AUXILIARY

The Lowndes County Medical Auxiliary met in Columbus for luncheon on November 21, with Mrs. E. Q. Withers, president, presiding.

Mrs. Leon Ellis, chairman of the program, presented Mrs. Fay Campbell of the Columbus Chamber of Commerce, as the guest speaker. Her subject was "Woman's Role in Defense."

Members present included Mrs. A. E. Brown, Mrs. Frank Baird, Mrs. Barnes, Mrs. S. L. Hollingsworth, Mrs. Joe Robinson, Mrs. W. L. Stallworth, Mrs. E. Q. Withers, Mrs. Thomas Wolford, Dr. Virginia Lane, Mrs. W. R. Duke, Mrs. D. E. Staton, Mrs. Julian Boggess, Mrs. John Davis, and Mrs. H. H. McClanahan.

The Treatment of Coronary Thrombosis

Lyle Motley, M. D., F.A.C.P.†
Memphis, Tennessee

The treatment of coronary thrombosis is simple in its essentials, but the details vary in individual patients according to various circumstances observed at any given time. One of the most important points in instituting rational treatment is a correct differential diagnosis. We realize that this sounds elementary and the scope of this communication does not allow its discussion in detail. However, from the standpoint of treatment it is necessary to emphasize the fact that the treatment of thrombosis is an entirely different matter from the treatment of coronary insufficiency with angina of emotion or exertion. In fact, part of the treatment of angina is definitely contraindicated in thrombosis particularly the use of nitroglycerin which has effects directly opposite to those desired in thrombosis. We will content ourselves with stressing the point that when a patient is first seen with pain that is obviously cardiac in origin, regardless of how mild the attack may appear, under which circumstances it occurs or the absence at the moment of any definite clinical evidences of thrombosis, it is far safer to give an opiate than nitroglycerin for relief of pain.

The treatment of coronary thrombosis may be roughly divided into two phases. The first is emergency treatment and relief of pain is not the least important part. Besides being of extreme importance to the patient the adequate use of opiates also indirectly helps combat shock by blocking the noxious effects of severe pain on the nervous system, and by allaying apprehension and producing relaxation. The choice of the opiate makes little practical difference but we see no point in resorting to narcotics or fancy preparations of opium when the time-honored morphine has proved over the years satisfactory for use in the majority of patients. The point of importance about opiates is adequate dosage and it can be truly said that the dose is enough for the individual circumstances rather than so many milligrams. In the presence of severe pain there is never much point in giving less than a quarter of a grain of morphine which should be repeated at short intervals until at least the greatest severity of the pain has been relieved. Some authorities advise giving a half grain to begin with and in most patients this is probably the correct initial dose. Acute coronary occlusion is one condition in which there is no excuse for timidity in the use of opiates, or any hesitation about their adequate use.

Other measures of emergency nature are those designed to correct the train of disturbed physiologic factors that go with the condition. The use of oxygen should be instituted as soon as possible regardless of the absence of cyanosis or other usual clinical indications for its use. The area of damaged myocardium around the infarct can be kept alive by supersaturation of the blood with oxygen and much of it will recover which otherwise would die and result in a larger infarct.

The lowering of the blood pressure as a part of the shock syndrome results in reduction of blood flow through the coronary system and interferes with the efficiency of collateral circulation around the infarcted area. This indicates the use of hypertonic solutions intravenously to correct as far as possible this element, and glucose is probably the solution of choice since it will also insure an adequate glycogen supply to the myocardium. The use of adrenalin in such circumstances has shown brilliant results in many patients since it not only raises blood pressure but dilates the coronary arteries. However, its use is frowned upon by some authorities because it has apparently precipitated ventricular fibrillation at times and this must be kept in mind when the use of adrenalin is considered. Possibly the weight of authoritative opinion is against its use.

Besides the mechanical occlusion of the vessel from the thrombus there is the element of reflex spasm of the collateral vessels which can seriously interfere with myocardial blood supply. Immediately after giving opium for relief of pain coronary dilating agents should be given and repeated at adequate intervals daily at least until recovery is well established. Papaverine hypodermically and aminophyllin intravenously are accepted drugs for this purpose.

---

†From the Department of Medicine, School of Medicine, University of Tennessee, and the Lyle Motley Clinic.

There has been recently more attention given to the problem of thromboembolism. This problem has two aspects. One is the extension of the original thrombus to involve more of the coronary vessels. The other is the formation of the thrombus on the endocardium which may be involved in the infarct, with resulting embolic complications due to portions of this thrombus breaking off and being washed away in the blood stream. As a result of numerous published reports over the past few years, it has come to be more or less standard procedure to combat these complications.

Heparin properly used is a very satisfactory agent and has the advantage of being easily controlled should its anticoagulant effect get to the point of producing bleeding tendencies. The dosage, of course, should be controlled with estimations of blood clotting time every four hours around the clock. This agent has the serious disadvantages of difficulty of satisfactory administration and expense.

Dicoumarol is effective and has the advantages of economy and ease of administration. However, these advantages are greatly offset by the difficulty in controlling to anticoagulant properties and serious and even fatal bleeding can occur if the dosage is not accurately controlled, because of the persistence of anticoagulant effect long after the drug has been discontinued. In this connection we cannot stress too strongly the point that dicoumarol should not be used unless unusually competent laboratory control is available. The prothrombin test must be accurately done and the drug dosage varied from day to day according to the results of the daily test. We have found that unfortunately some laboratories whose results are accurate in most other respects cannot be depended upon to furnish safe control tests for the use of dicoumarol.

There is a relatively new anticoagulant agent bearing the trade name tromexan. This agent like dicoumarol has the advantages of economy and ease of administration. It also has the advantage of being less toxic than dicoumarol, which drug has at times caused continued and serious bleeding even after the prothrombin time has returned to acceptably safe levels. With tromexan the bleeding tendency diminishes more or less parallel with reduction in the prothrombin time. However, these advantages do not eliminate the strict necessity for adequate laboratory control since bleeding with over-dosage will persist much longer than with heparin and is not as immediately controllable as in the case of heparin, bleeding from the latter being controllable almost in a matter of minutes and does not return.

Coronary thrombosis is not an indication for digitalis and should not be used for any purpose except the possible appearance of congestive failure.

The appearance of premature contractions when they have not previously been present suggests impending ventricular fibrillation and indicates the use of quinidine in an effort to prevent this catastrophic complication.

After convalescence is established common sense is the most valuable guide in the general management of the patient. There is no doubt that bed rest has been carried to undesirable extremes in the past. A reasonable amount of mobility on the part of the patient should be allowed as his comfort indicates and even an early sitting position in bed is probably desirable in most patients, quite contrary to what our past conceptions have been. Ordinarily the use of a properly located commode by the side of the bed on which the patient can sit upright for a bowel movement entails less exertion than the usual attempts to have a bowel movement in a recumbent position on a bed pan no matter how skillful the nursing service may be.

The use of preparations of agar or mineral oil or a combination of them or even mild laxatives should be started particularly in elderly patients to prevent fecal impactions and difficult bowel movements when the feces are very dry and hard.

The question frequently arises about the use of tobacco and alcohol. In reasonable doses it is agreed that alcohol has beneficial effect in those patients who are accustomed to taking it occasionally since it has a definite coronary dilating effect and also in patients who tolerate it well it has a sedative and relaxing effect that is desirable. The question of tobacco is controversial and, of course, theoretically produces vasospasm and is undesirable. However, from a practical standpoint any good effects of eliminating tobacco are probably offset by the irritability, restlessness, and general unhappiness produced by withdrawing tobacco in a person who has been accustomed to smoking for many years. Probably a compromise is the best solution in those patients who have been smoking excessively by reducing the amount of tobacco used.

Anything that will add to the patient's mental and physical comfort should be used and in general every patient should be handled as an individual problem.

At any time during convalescence there may appear pain in the shoulder and hand which has been designated the shoulder-hand syndrome of thrombosis. In the past this has been considered to be a simple capsulitis or bursitis of the shoulder but is now recognized as a causalgic type of pain which actually is a reflex dystrophic phenomenon mediated through the lower cervical and upper dorsal nerves. This pain can assume serious proportions and at times is associated with definite atrophy of the muscles of the arm, and at times this can appear to the patient to be the most serious aspect of his troubles. Fortunately, blocking the stellate ganglion with novocaine one or more times will relieve it specifically.

Early Treatment of Burns

Lorenzo H. Adams, M. D.
Memphis, Tenn.

New trends in the treatment of burns have been the subject for much discussion and interest. The two outstanding factors responsible for this awakened interest in the treatment of burns were the reports of the dramatic results obtained by the use of ACTH and cortisone, and the use of the open air or exposure method of local treatment. The purpose of this paper is to give an evaluation of these new trends and to correlate these concepts with the basic surgical principles involved in treating the burn patient.

The treatment of extensive burns may be divided into four categories:

1. Treatment of shock
2. Local treatment
3. General supportive treatment
4. Skin grafting

The most immediate concern of the surgeon is the prevention or control of shock. For relief of pain opiates are used. Second degree burns appear to be more painful than the deep third degree burns. In children and elderly individuals pain can be controlled adequately with small doses of codeine. One-fourth grain of morphine is adequate for most adults. Because of impaired circulation, subcutaneous or intramuscular injections are slowly absorbed. Repeated injections may result in a cumulative effect after the circulation is restored to normal. This hazard may be avoided by injecting the morphine intravenously until the desired effect is obtained. It has been pointed out that restlessness and delirium have been mistaken for pain, and that excessive administration of morphine may precipitate shock and terminal crisis. General anesthesia should be avoided.

Whole blood is preferable to plasma, even in the initial stages, for restoration of the circulating blood volume. In spite of apparent hemo-concentration there is a loss of red cells from several possible sources; 1) destruction in the burned area, 2) fragmentation and increased fragility due to morphological changes produced by thermal injuries, 3) stagnation in the dilated capillary bed, and 4) the so-called sludge phenomena.

At the time of vena puncture sufficient blood is withdrawn for typing, cross-match, and hematocrit determination. Plasma infusion is given until blood is ready for transfusion.

No formula for calculation of estimated blood or fluid requirements during the shock period of acute burns is as effective as sound clinical judgment based upon careful observation of the patient. During the first twelve hours in an adult patient, one to two liters of blood is given, the amount and rapidity of administration dependent upon the degree of shock. The amounts of the various solutions should be altered to fit the patient's individual requirements and his response to treatment. The urinary output is a valuable guide as to the effectiveness of therapy. In order that frequent checks can be made on urine output, a Foley catheter is placed into the bladder.

The urine is collected and measured at one-hour intervals. An output of 25cc. per hour is indicative of adequate therapy.

The severely burned patient is not given any nourishment by mouth during the first twelve hours. The patient is urged to drink Haldane's solution to control thirst. Haldane's solution is 3gm. NaCl 1 1/2 gm. $NaHCO_3$ per liter of H_2O.

Oxygen therapy is indicated in case of definite or impending shock, preferably administered by nasal catheter at the rate of 6-8 liters per minute.

At the end of twelve hours the patient's condition should be re-evaluated on the basis of appearance, temperature, pulse, urine volume, and specific gravity, red count, hemoglobin and hematocrit. If the hematocrit is still 50 or above, and the patient's condition seems grave, transfusions are continued until there is evidence of subsidence of shock. Thereafter, and in less severe burns as well, blood is given as necessary to prevent the development of intractable anemia.

In the literature there have recently been several reports of most dramatic results from the use of ACTH and cortisone in the treatment of severely burned patients. As a result of these reports the National Research Council has been conducting experimental studies on the use of ACTH and cortisone in the treatment of burns. The Research Council has failed to confirm these claims of success and feels that at the present time these drugs have no place in the routine treatment of burns.

The local treatment of burns is of secondary importance to the institution of shock therapy. The exposure method of treatment is now regarded as the treatment of choice. This method was introduced in 1947 by A. B. Wallace at the University of Edinburgh. The aims of this method are:

1. To produce an environment unfavorable to the growth and multiplication of bacteria by a) the production of a dry surface, b) exposure to light, and c) the reduction of the temperature of the surface to below that of the body.
2. To avoid antiseptics which cause further injury to tissue cells.
3. To provide rest of the affected parts by immobilization.
4. To limit edema, where possible, by elevation.
5. To render nursing care simple in areas where dressings would otherwise be continually contaminated, e.g., buttocks, thighs, perineum, face.

After the treatment of shock is started, the patient is stripped of clothing and placed on sterile sheets. Loose shreds of skin may be gently removed and gross dirt is washed off with detergents and copious amounts of saline. The rough and complete dèbridement with or without a general anesthetic is to be condemned. Many burned patients have been thrown into irreversible shock and have died during such procedures. The burn is exposed to the air in the general surgical ward, and while it is protected carefully from injury, no special precautions are taken to prevent airborne contamination.

Extremities which are involved are kept carefully elevated. If the burns involve the genitalia, or if the patient is in an open ward, a cradle is placed over the patient to keep the covering sheet from coming in contact with the burned surfaces. No heat lamps or local applications are used.

In cases of burns involving the hands, pressure dressings are applied to the hands in the position of function. These dressings minimize the marked edema. This pressure dressing is removed at the end of forty-eight hours and these areas are then treated by the open air method. Within 48 to 72 hours thin crusts form over the raw surfaces. These are allowed to remain untouched as long as they are perfectly dry. If the burns are only second degree they will scale off eventually with complete healing underneath. If there are third degree burns usually some liquefaction appears at the periphery of the dry slough in about 14-21 days. With this method of treatment it will be noted that fewer patients will require grafting. Healing occurs in a much shorter time than with the use of pressure dressings. The period of temperature elevation is decreased, blood and protein requirements are less, and the length of hospitalization in the average case is considerably shortened. These patients, after the initial stages of shock, are much more comfortable than the patient treated by pressure dressings. Early ambulation is encouraged if the lower extremities are not involved. These patients are able to eat better, their morale is improved, and there is a most noticeable decrease in the usual stench and foul odor which is most common in the patients treated by the pressure dressing method.

The patient who has circumferential burns of the trunk cannot be conveniently treated by the open air method due to the fact that it is impossible to expose all of the burned surfaces at one time. There are special frames by which this may be partially accomplished, but we are still treating these cases by the closed method.

At the end of the initial stage of burn trauma, after shock is controlled, these patients are allowed to take food and water as tolerated. The Haldane's solution is discontinued. A high vitamin, high protein, high carbohydrate diet is recommended. However, this diet is more easily ordered than consumed by the patient, and frequently it is necessary to intubate these patients in order to assure adequate intake.

During the recovery phase and throughout the entire convalescence of the patient it is extremely important to recognize the factor of psychic trauma and to insist that all medical and nursing personnel participate in measures which will help the patient's morale. If available special nursing care is a great asset to afford constant surveillance during the stages of shock and to be sure that your orders are strictly adhered to. Usually chemotherapy is discontinued after the fifth day. Blood transfusions are given as often as necesary to keep the red blood cell and hemoglobin level within normal limits.

In third degree burns skin grafting should be started by the end of the third week. At that time the lines of demarcation between second and third degree burns have been definitely established. These third degree areas are surgically debrided and covered with split skin grafts. It is advisable that this operative procedure be limited to one hour since these patients do not tolerate anesthetics well. Pressure dressings are applied and within five to seven days the patient is ready for further grafting. During the convalescent period it is very important to prevent flexion contracture by splinting in the position of function.

One problem which often confronts the surgeon in a hospital center is the treatment of burned patients who have had inadequate therapy elsewhere. After the patient has been treated for burns for a considerable period of time, he is usually in a state of severe malnutrition, anemia and negative nitrogen balance. Too frequently the optimum time for skin grafting has passed. Exuberant granulation tissue has formed while waiting for the burn to heal from the margins. The patient is septic as a result of infrequent change of dressings. Additional granulating wounds may be present as a result of infected donor areas from which skin grafts were taken too thick. Needless to say, surgery is not attempted on these patients until they are put in the best physical condition possible. Frequent change of wet dressings for control of infection, multiple transfusions, and the general supportive treatment outlined above is instituted.

In spite of great improvement in the techniques for handling of the burned patient, burns still remain one of our greatest surgical problems. Excluding war casualties, the mortalities as a result of burns in the United States last year were greater than 8000. This number does not include the hundreds of thousands of people who were permanently crippled for the rest of their lives as a result of burns.

We are all war and disaster conscious and realize that in the event of atomic warfare the greatest problem will be the treatment of large numbers of burns. Work is going ahead in the development of plasma substitutes to be used in restoring circulating blood volume. The open air method of treatment affords us the best method of treatment for large numbers of burned patients with a minimum of personnel and a maximum of efficiency. Any plan of treatment must depend, however, on careful organization for handling of disaster victims and a knowledge on the part of the physician of the underlying pathology and physiology of severe burns.

REFERENCES

Allen, H. S., and Koch, S. L.: "The Treatment of Patients With Severe Burns." Surg. Gynec. and Obst., 75:914, 1942.

Blocker, Truman G: "Experiences With The Exposure Method of Burn Therapy." Journn. of Am. Plastic and Reconst. Surgery, Aug., 1951, Vol. 8, No. 2.

Kyle, M. J., and Wallace, A. B.: "The Exposure Method of Treatment of Burns." Brit. Journ. Plastic Surgery, 3:144 (July) 1950.

Romence, H. L.: "Common Errors in Burn Treatment." American Journ. of Surg. Vol. LXXIII, No. 3, March, 1947.

Wallace, A. B.: "Treatment of Burns." Brit. Journ. Plastic Surg. Vol. I., No. 4, January, 1949.

Congenital Atresia of the Esophagus with Tracho-esophageal Fistula*

George E. Twente, M. D. and J. Harvey Johnston, M. D.
Jackson, Miss.

INCIDENCE:

Congenital atresia of the esophagus with tracheo-esophageal fistula occurs more frequently than is generally assumed. Comparing the incidence with a more generally known congenital anomaly, it is found to occur once in approximately 2,500 births, which is the same as that of harelip and cleft palate. Along with the increasing interest and development of intrathoracic surgery and particularly of cardiac anomalies, this condition has been elevated to the level of correctible congenital anomalies and is no longer of interest, only at the autopsy table. Although the condition was first reported in 1703, only 136 cases were reported in the next 215 years. In the past ten years, because of the increasingly hopeful prognosis, numerous cases have now been reported so that more than 500 cases have been reported to date.

PATHOLOGY:

Most frequently the upper esophagus ends in a blind upper pouch (Figure 1). The lower esophagus arises from the trachea approximately 1 cm. proximal to the bifurcation of the trachea, as a tracheo-esophageal fistula. This type occurs in between seventy and eighty per cent of cases. Less frequently there may be muscular continuity of the two segments; the lower segment may be contracted for a variable distance below the origin, or there may be an agenesis of the lower esophageal segment.

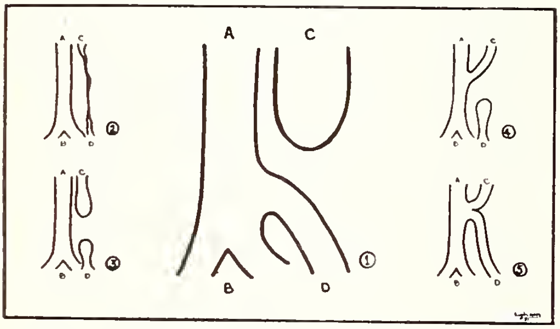


Figure 1. Types of anomalies found with tracheo-esophageal fistula. Type 1 occurs in 70-80 percent of cases.

These anomalies, particularly the most frequent type, of course prevent the swallowing of food and allow regurgitation of stomach and upper intestinal contents into the tracheobronchial tree as well as aspiration of secretions of the mouth and upper esophagus. In addition, if there is a patent tracheo-esophageal fistula, air passes directly from the trachea into the stomach.

As in any type of congenital anomaly other anomalies are present in a high percentage of cases. These are most frequently imperforate anus, atresia and/or stenosis of the pylorus, atresia of the bowel, cardiac anomalies, and any other known type. The presence or absence of the coexisting conditions frequently determine the final outcome rather than the original pathology.

Death within three weeks is inevitable in the untreated case. It is usually caused by aspiration, pneumonia, starvation, or coexisting anomalies.

SYMPTOMS and DIAGNOSIS:

This condition should be suspected in any newborn infant when attempts to feed are frustrated, accompanied by choking attacks, regurgitation, dyspnea, and cyanosis. The diagnosis may be confirmed radiographically by passing a soft rubber catheter into the esophagus until obstruction is met. Iodized oil is then inserted. Radiographs will reveal the blind upper pouch extending a variable distance into the upper chest, showing up as a wide shadow, shaped like an egg with a conical end.

A great deal of information as to the type and degree of anomaly may be obtained from the pictures, which will aid in determining the procedure of surgical repair as well as the approach to the lesion. The presence of air in the stomach indicates the presence and patency of the tracheo-esophageal fistula. Absence of air in the small bowel with air in the stomach may indicate the presence of duodenal atresia or pyloric stenosis. Absence of air in the stomach may indicate the agene-

---

*Presented before the Jones County Medical Society, June, 1951.

sis or stenosis of the lower esophageal segment, and only rarely and questionably the absence of the tracheo-esophageal fistula.

In the absence of air in the stomach, even though agenesis of the lower esophageal segment is not present, Haight has found small fistulous openings at that point. By noting the level to which the blind upper segment descends into the chest on expiration, and comparing this level with the position of the bifurcation of the trachea, one may estimate the length of the defect between the esophageal segments and thus the advisability of end to end anastomosis. Tracheal injections of iodized oil will aid in determining the level of the tracheo-esophageal fistula.

Other congenital anomalies such as imperforate anus, cardiac anomalies, and those of the upper respiratory tree, should also be sought for on physical examination and radiographs. The presence of marked bilateral bronchopneumonia will also preclude correction of the defect.

TREATMENT:

Once the diagnosis is made, the treatment is always surgical. Pre-operatively the infant is given whole blood transfusions, if indicated, and infusions to restore or obtain fluid balance. Because of the danger of electrolyte retention leading to generalized edema, saline solutions are given only sparingly. Penicillin is given in relatively large doses along with streptomycin. The foot of the bed is elevated, and the infant turned between the prone and lateral positions at frequent intervals, to prevent atelectasis and aspiration of esophageal contents and mucus. If the approach is to be on the right side, the right side is kept dependent most of the time, in like manner, the left side is kept dependent most of the time if a left sided approach is anticipated. This maintains a well aereated lung for surgery, and should atelectasis develop it will affect the lung on the side of the approach. Mucus and excessive saliva are removed by frequent and gentle suction.

The surgical problem is threefold: to allow passage of food into the stomach, to drain the blind upper pouch, and to close the tracheo-esophageal fistula. The role of the well trained and capable anaesthesiologist is inestimable, as is that of the pediatrician in diagnosing the condition early as well as in the preoperative and postoperative period.

If an end-to-end anastomosis is feasible, the esophagus is approached through a right extrapleural posterolateral incision. The posterior half of either the third or the fourth rib is resected subperiostally and removed, disarticulating the rib posteriorly. The internal periosteum of the rib bed is incised carefully to within 5 cm. of the anterior or cut end of the rib. The parietal pleura is separated from the chest wall by careful blunt dissection with the finger and dissectors, the pressure being directed against the chest wall and mediastinal structures and not the pleura. The azygous vein is divided and the upper blind pouch isolated (Figure 2). Once it is located, a No. 8 soft rubber catheter is inserted by the anaesthetist to aid in isolating it from the surrounding structures. This segment should be well freed since it has an excellent blood supply, much better than the distal segment, which should be spared as much trauma as possible without sacrificing adequate length for closure.

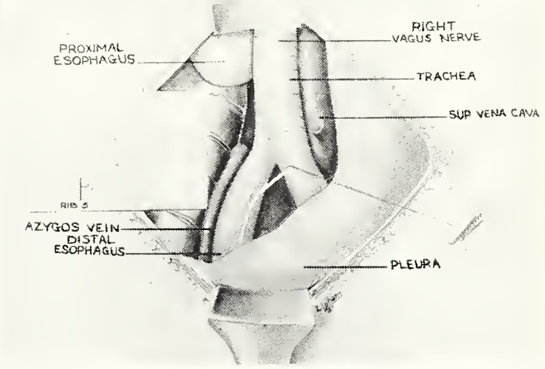


Figure 2. Inset shows incision and rib three as being resected. The fourth rib may be used instead. Note exposure of blind upper segment and right vagus nerve leading to the tracheo-esophageal fistula.

Once the proximal segment is freed the right vagus nerve is easily identified and followed distally leading to the tracheo-esophageal fistula (Figure 2). The communication between the trachea and the distal esophagus is closed with silk (00000) sutures, which may be interrupted or continuous, depending on the size of the fistula (Figure). The two ends of the esophagus are then opened and an end-to-end anastomosis is performed over a No. 8 or No. 10 plastic tube with the distal tip removed. The tube is passed through the two segments into the stomach, and is used for feeding postoperatively. It causes

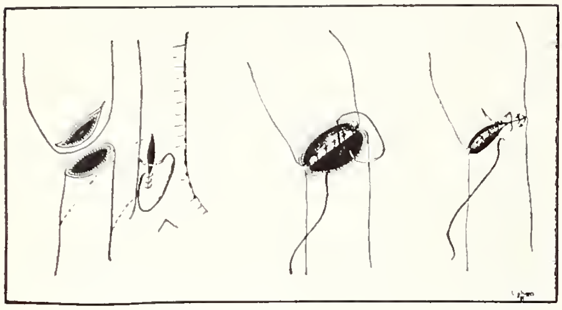


Figure 3. Shows closure of tracheo-esophageal fistula and anastomosis of esophageal segments.

very little trauma, and may be left in place ten to twelve days. For the anastomosis, (00000) black silk on an atraumatic needle is used. One layer of interrupted sutures is used which include the mucosa and muscular wall, tying the sutures inside. A row of reenforcing sutures is placed in the outer coats using the same type suture. The chest is closed without drainage. The lung is well aereated when the closure is made. A small colon tube with multiple openings is used to remove the air, particularly if the pleura has been inadvertently opened. This tube is removed as the skin is closed. The extrapleural space is not drained.

Postoperatively the infant is placed in an oxygen cradle. The mouth is aspirated frequently to remove excess saliva and mucus. During the first 24-hour period parenteral infusions are given slowly through a plastic tube placed in the dorsal vein of the ankle prior to surgery. Penicillin and vitamin C are given. On the second day small feedings —two to three drahms of 10 per cent glucose in distilled water — are given through the stomach tube. This is increased, and formula is started on the second or third day. On the fifth to seventh days, the stomach tube is removed and the formula is given by mouth.

When there is an agenesis of the lower esophageal segment, or when the defect is greater than three cm. between the esophageal segments making end-to-end anastomosis impossible, other procedures are necessary. Esophagostomy and gastrostomy may be performed and an extrathoracic plastic esophagus fashioned, or preferably an esophagogastrostomy through the left transpleural approach.

In some clinics gastrostomy for feeding purposes and to relieve distension of the stomach and intestine is performed on the day following the anastomosis. We do not believe that these are necessary in most cases and only add to the morbidity and mortality, the exception being in those cases with sequelae.

The most frequently reported complications postoperatively are strictures and fistula formation at the sight of anastomosis. Both of these are usually caused by excessive tension at the anastomosis, and infection. The strictures may occur as sequelae of fistulae. Small fistulae will usually close spontaneously after gastrostomy is performed; while large ones, if not rapidly fatal, will require further exploration.

The symptoms of stricture consist of regurgitation and the recurrence of the original symptoms. Strictures are treated by graduated dilators guided by a string either passed into the duodenum on a leaded weight, or passed through the gastrostomy opening retrogradely.

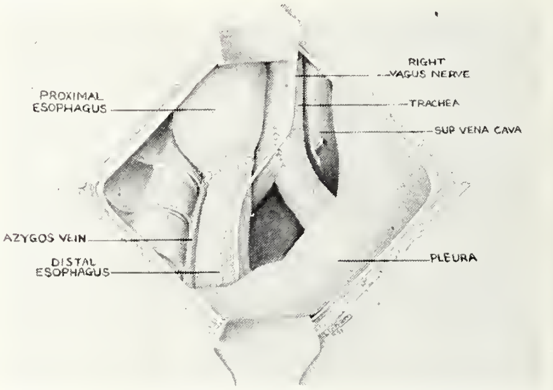


Figure 4. Completed esophageal anastomosis and closed trachea. Note divided azygos vein.

PROGNOSIS:

As previously stated, untreated cases will die within three weeks. Prior to 1941-42 there were no reported survivals; although Lanman of Boston performed the first end-to-end anastomosis in 1936, and thirty infants were operated on at Boston City Hospital from 1936-1940. In 1942 Haight reported the first successful end-to-end anastomosis. Since that time a number of series of successful cases have been reported with mortality rates of fifty per cent and better. In most instances unfavorable results are due to coexisting congenital anomalies not recognized before surgery, prematurity, and delay in diagnosing the condition until the infant is in poor condition or a marked pneumonic process has developed.

SUMMARY OF CASES:

In the past two years we have seen six cases of this condition. One case died the night prior to contemplated surgery having a coexisting cardiac anomaly. Five cases were operated, three of which are alive and well at this time. In all cases end-to-end anastomosis was possible.

The first case died on the third postoperative day. Autopsy revealed the anastomosis to be intact but there were the following coexisting congenital anomalies: absent gallbladder, absent left kidney, duodenal atresia, and bilateral inguinal hernia. This was the first case. An approach was used resecting the vertebral ends of the second through the fifth ribs. Approximately as much time was required with this approach to expose the pathology, as we now use in the entire operation through the third or fourth ribs. In addition, the defect between the esophageal segments was greater than three cm.

The second case was operated on the fourth day of life and was in excellent condition. The anastomosis was accomplished with some difficulty since the defect between segments was about three cm. On the sixth postoperative day the child developed symptoms similar to the original ones, and lipiodol esophagrams revealed a structure at the anastomotic sight. Attempts at dilatation from above were unsuccessful. A gastrostomy was performed and a string of silk was passed from below upward to use as a guide for dilatation, which was done successfully. The child is swallowing normally now and is of normal size and weight.

One other infant born in the home, a premature weighing only four pounds six ounces and not seen until the eleventh day of life, died on the second postoperative day. There was severe bronchopneumonia.

The last two cases have survived. In each of these the defect between segments has been one cm. or less, allowing an easy anastomosis. One of these infants exhibited an unusual finding or regurgitation of bile. Swenson and Potts stated that they had seen this condition before. The bile is coughed up after passing through the stomach, lower esophagus and trachea. It is very irritating to the tracheobronchial tree. Swenson's case also had duodenal atresia. This patient did not have atresia of the intestine and did well postoperatively.

The last case had also a web of the larynx. The defect in the esophagus was practically one of muscular continuity. A preoperative tracheotomy was necessary because the defect in the larynx was quite elongated, and would not allow passage of an intratracheal tube. It has done well and is now ready to be treated for the congenital laryngeal web.

REFERENCES

Bigger. I. A.: Ann. Surg., 129, 572-587. 1949.
Haight. Cameron: Ann. Surg., 120:623, 1944.
Lanman, Thomas: Arch. Surg., 41:1060-1083, 1940.
Ladd. W. E.: New England J. Med., 230:625-637, 1944.
Swenson, O.: Surgery, 22:324, 1947.
Sweet, R. H.: Ann. Surg., 127:757, 1948.
Swenson. O.: Personal communication.

AAGP NATIONAL HEADQUARTERS

Headquarters for a National Doctors' Group will be housed in a proposed 2-story-and-basement building on Fifty-first-Street east of Brookside, in Kansas City, Mo. The Academy of General Practice has purchased a tract there. It is hoped construction can proceed in about a year. The new building will have 18,000 square feet in a pink and white marble setting. Cost of the proposed facility will be more than $250,000.

COURTESY CARD

ELMER D. GAY, M.D.

Practice Limited to Asthma and
Associated Allergies
Hours by Appointment
Hatten Building Phone - 1824
Gulfport, Miss.

Dysmenorrhea*

J. C. KNOX, JR., M. D.
Vicksburg, Miss.

IN DISCUSSING dysmenorrhea, and especially its treatment, I am reminded of the remark of a Yankee friend of mine who came south last year to hunt quail. After several coveys had been found, he had still not fired his first shot. When I asked him why, he replied, "I can't see the birds for the noise".

Very often in dysmenorrhea we can't find the cause because of the symptoms, nor the cure because of the multitude of remedies. These failures probably are not due to lack of knowledge, but rather, as in the quail hunt, to our inability to pick out one cause from the covey of possibilities, and concentrate our aim on that one problem. I do not mean to infer that there is always only one cause, nor that any single cause is amenable to only one treatment, but it is necessary to follow a methodical and well-planned course of action in these cases. This paper will attempt to point up the physiologic basis for these, and summarize some of the more simple forms of conservative treatment in use today. I will not attempt to give all of the effective treatments, nor even all of the more common ones; many of you, no doubt, have obtained better success in your own methods.

The uterus, unlike almost any other organ in the body, is called upon for a multiplicity of functions, each of these functions in some way unrelated to others, and yet all related in some ways to each other. Added to this, there is a correlation of endocrine functions demanded from at least three major glands, and possibly more. Finally, there is the complicated neurovascular mechanism which plays an important part in itself, but which may be influenced in turn by hormone tide, emotions, or cyclic fluctuations. Small wonder there is, then, that so many treatments have failed, and that often our most logical therapeutic pattern ends in complete reversal of expected results.

The incidence of dysmenorrhea is high; at least fifty per cent of all menstruating women will admit to some pain or discomfort, and approximately thirty-five per cent to moderate or severe pain. These figures would probably be higher if this subjective symptom could be standarized in interpretation, for the threshold of pain will vary from one individual to another, and doubtless many women have simply adjusted themselves to a mild or moderate degree of dysmenorrhea.

The key to the successful treatment of dysmenorrhea lies in a basic understanding of uterine physiology plus recognizing the fact that dysmenorrhea itself is not a disease but a symptom. It is the result of some other defect or disease rather than an entity in itself. Treatment, therefore, resolves itself into finding the cause and eliminating it.

As far as endocrine influence is concerned, probably the most important single fact is that functional dysmenorrhea will not occur in the absence of ovulation and subsequent progesterone formation. Anovulatory cycles are characteristically painless, and dysmenorrhea can be produced in anovulatory cycles by progesterone administration. The estrogens have a parasympatheticomimetic effect, and produce vasodilation. Progesterone conversely produces vasoconstriction. It is logical, therefore, to assume that any disorder or condition causing excess production of one, or less production of the other, or imbalance between the two will cause variation in the intensity of symptoms.

The nerve supply and reflexes of the uterus are unlike any other organ in the body. The autonomic nerves to the uterus do not enter the myometrium itself, but terminate in the subserosa, so that we might say that the uterus has no true intrinsic motor nerve supply. This is pointed up by the fact that nerve-blocked gravid uteri have been observed to go through the process of labor uninterrupted, and we must conclude that hormonal influence is mainly responsible for uterine motility. Stimulation of the hypogastric plexus, through which courses the sympathetic nerve supply to the uterus, produces vasodilatation, whereas parasympathetic stimulation causes no vasomotor reaction but does cause muscular contraction. The pain of dysmenorrhea is of the sympathetic type; that is, it is irregular and diffuse in distribution, and is in turn affected by mood, mental outlook and emotions. When presacral neurectomy or sympathectomy is done, there is an increased sensitivity to hormone stimulation, a fact that is well known but not entirely understood, and it is probable that the relief that is afforded by this procedure is due to this effect as much as from any other.

---

*Read before the Section on Obstetrics and Gynecology at the eighty-third annual session of the Mississippi State Medical Association, Biloxi, Miss., May, 1951.

The subject of electrolyte balance is tied in with this picture, and there are marked evidences of water retention, increased capillary fragility, mucous membrane congestion and other vasomotor changes even in those women not subject to dysmenorrhea. Estrogens have the property of retaining sodium in the body, and sodium itself when present in excessive amounts will cause edema and congestion by its "water-holding" ability. Therefore high estrogen level may predispose or cause water retention, edema and other vasomotor changes.

The above summary is, of course, applicable mainly to functional dysmenorrhea. The organic group is better defined, in that there is usually some disease process, or anatomical change as the causative agent. I have broken down the more common types of each category for the purpose of discussion, but we must bear in mind that there may exist more than one cause and category in a single case.

In the functional group is found, first, the **emotional** or so-called **constitutionally inferior** type. The very fact that many girls are taught the use of such terms as "being sick", or "having the curse", is indicative that many of these cases are psychogenic, and dysmenorrhea may be used as a shield to obtain special favors or to avoid unpleasant situations. A sudden fright or physical hurt may cause increased uterine contractions; but this emotional response can occur only during the progestational phase. The **endocrine** group is best defined as those who are deficient, oversufficient, or maladjusted in hormones, and who obtain relief from administration of various endocrine preparations. The **neurogenic** causes have been briefly discussed already, but I would like to add two other types. In some cases, stimulation of the internal cervical os causes uterine contractions, cervical spasm, and pain. This is probably due to the fact that the cervix is a sphincter-like organ and is governed by a reflex arc to the lumbar cord and ganglion of Frankenhauser. In other cases, ovarian palpation will reproduce the very pain complained of during menses the so-called ovarian dysmenorrhea.

Premenstrual tension, or premenstrual intoxication, is not always associated with true dysmenorrhea, but is frequently concurrent. This syndrome, characterized by headaches, backache, mastodynia, bloating, nervousness, etc., in some cases is caused from the accumulation of menotoxin. This toxin has profound systemic effects, and produces tissue hydration and water retention, which in turn brings on the above symptoms to a large degree.

In the **organic** group are listed any causes which are not directly related to function, i.e., obstructions, retrodisplacements, inflammatory diseases, cervical lacerations, tumors, endometriosis and adenomyosis, extra-pelvic lesions, and allergy. It must again be remembered that more than one of these conditions may exist in the same patient.

As in any medical investigation, it is important to review thoroughly the patient's **history. Age, marital status, gravidity, parity** and **menstrual irregularities** should be noted The **time relation of the pain** to the menses may signify endometriosis, adenomyosis, or tumors. The **type of flow** is important, particularly severe cramp with clot passage. **Menorrhagia** may suggest membranous dysmenorrhea or other endocrine affectations, inflammatory disease, or tumors of the uterus or ovaries. The **duration and character of flow** should be ascertained, as well as the duration of the dysmenorrhea itself. It is significant that some of these conditions date from parturition, or from menarche, or from some other particular incidence in which anatomical or physiological change occurred. It should be determined whether the **onset** was sudden or gradual, since this may distinguish organic from functional derivation. A history of **pelvic or extra-pelvic disease**, such as salpingitis or appendicitis, is important. The **character of the pain** may point to a possible cause such as back-ache to retroversion or cervicitis, or lower quadrant pain to ovarian or tubal pathology. Finally, we should attempt to evaluate the **psyche** of the patient, the sex life, home life, habits, etc.

Each case should be given a complete **physical examination**, for there may be a factor of general health or extra-pelvic disease causing dysmenorrhea. **Abdominal examination** may reveal point tenderness, masses, or crepitation. In performing the **pelvic examination**, note should be made of the outlet, support or relaxation of the pelvic floor, discharge, scarring, etc. The **cervix** should be palpated well, manipulated, and visualized with a good light after thorough cleaning. Lacerations, infections or stenosis of this organ may be the only abnormal pelvic finding, but any one is sufficient to cause dysmenorrhea. Determination of the position, size, shape, and mobility of the **corpus**, and a thorough exploration of the **adnexae** and **cul-de-sac** should follow. Pain in the **ureteral or appendiceal areas** may give a clue to extra-pelvic lesions. The **rectal examination** should not be omitted, since the parametria can be better explored rectally than vaginally in many instances. When the physical examination has been completed, **other studies** may be indicated; laboratory work, basal metabolism, biopsy, cytological studies, x-rays, or allergy tests.

The treatment of dysmenorrhea rests upon historical and physical findings and the practitioner's judgment. In general, I believe that the majoritv of these cases can be helped or cured by conservative measures, many of which can be carried out in the office. All conservative methods of treatment should be tried before more radical measures are instituted, except in the most obvious cases.

In those cases classified as functional, treatment will depend upon the physiopathology of endocrines discussed earlier in this paper. Generally speaking, those women with small, hypotrophic, under-developed uteri, and poor secondary sexual characteristics should be treated by estrogenic stimulation, possibly combined with a pituitary gonadotrope. Those women with normal sized uteri who are well developed sexually are more apt to get relief from combined estrogen and progesterone therapy. Small doses of estrogens administered from the fifteenth through the twenty-fifth or twenty-sixth cyclic day often will give relief, probably through the vasomotor action, and because of the restoration of estrogen—progesterone balance, Androgen therapy for dysmenorrhea can be given either pro-ovulatory or post-ovulatory. Ten to thirty milligrams daily for six days prior to ovulation will prevent ovulation and relieve dysmenorrhea. However, relief can be obobtained by administering ten milligrams of methyl-testosterone orally for ten days to two weeks premenstrually and following ovulation. Thyroid administration is indicated in some cases also, usually in the younger or teen-age group. Even when the basal metabolism rate is normal, administration of small doses of thyroid—one fourth to one half grain daily—will produce striking results in some cases.

The constitutionally inferior group often can not be treated adequately by the gynecologist, but should be referred to a psychiatrist. On the other hand, many cases of this type can be helped greatly by education and suggestions as to diet, exercise, and general health measures. This factor probably has been underestimated in importance by the majority of practitioners, for we are always too eager to place dysmenorrhea on an endocrine or organic basis.

One form of functional dysmenorrhea, membranous dysmenorrhea, is characteried by successive abnormal hemorrhages, and can be controlled also by endocrines. In this condition, the spiral arterioles develop intensely in the second period, with some regression of the functional layer. Vasoconstriction follows with subsequent exfoliation and menorrhagia. Recommended treatment consists of ergotomine or estrogens for four or five days premenstrually, with addition of testosterone to limit arteriole growth.

In the **organic** group treatment is directed at correction of the anatomical defect or disease process. In retroversion for instance, insertion of a **pessary** many times will prove or disprove the feasibility of uterine suspension, and often will permanently relieve dysmenorrhea. **Cautery** of eroded and infected cervices and treatment of other pelvic infections can be carried out in the office or at home. **Hot douches** combined with an indicated **antibiotic**, either hypodermically or per suppository, is a good adjunct to this routine. Pelvic congestion, resulting from retroversion, infection, or other factors, is a sure cause of dysmenorrhea, and the above measures will assist in restoring circulation, and will improve the tone of the pelvic organs. If **surgery** is later necessary, this round of treatment will lower the morbidity and possibility of thrombophlebitis, which complication is more frequent in pelvic surgery than in any other form.

There should be no haste in performing surgery on these patients; most of them are seen during a seizure, and following the menses ample time for complete study should be taken. It is certainly an undesirable experience, for example, to perform a neurectomy on a patient who in the first place should have been consigned to a psychiatrist, and it is no less disquieting to realize after other surgical procedures that constitutional or endocrine therapy was the real answer to the problem initially.

The above remarks are not meant to imply that surgery has little place in the treatment of the conditions underlying dysmenorrhea; indeed, often it is the only logical approach. Such conditions as tumors, endometriosis, adenomyosis, and some neurogenic disturbances are almost always amenable to surgery. Dilatation of the cervix is all that is necessary to cure some of these cases; however, a trial of this can be performed in the office prior to more complete dilatation under anesthesia. In the case of severe ovarian dysmenorrhea, often ovarian neurectomy must be performed. A technic of this has been devised by O'Donel Browne of Dublin, who ligates and severs the infundibulopelvic ligaments, then carefully sutures the stumps together. Ureteral dilatation may cure some dysmenorrheic patients, as will simple appendectomy.

Recently antihistaminics have been used in certain forms of dysmenorrhea with good success, but in other instances with dismal failure. In a true allergic type of dysmenorrhea this should be valuable, and based on the action of histamine as we know it, in relation to the menstrual physiology, some form of antihistaminic should be valuable as an adjunct to treatment.

In most cases of **premenstrual tension** and mild dysmenorrhea, where there is no evident systemic or organic disease, sodium replacement and general health measures are usually effective. Ammonium chloride or ammonium nitrate daily for ten or fourteen days premenstrually, along with low-sodium diet and institution of general health measures will generally relieve these symptoms. Magnesium gluconate in daily doses of twenty grains is effective in some cases. Vitamin A has been used, even in individuals who exhibit no deficiency, in doses of 200,000 units from the fifteenth premenstrual day to the first menstrual day. It is thought that this diminishes ovarian activity as well as eliminating sodium. Methyl-testosterone administered for ten days premenstrually will alleviate premenstrual tension. A word of caution in regard to the use of male hormones in dysmenorrhea or premenstrual tension: in those patients who exhibit tendencies toward masculinization, such as evidenced by hair distribution and other male characteristics, the male hormones should not be used. Also, if evidences of masculinization develop during treatment, the hormones should be discontinued, in which event these signs usually regress.

In closing, I would like to enter the plea that conservative treatment be given more of these cases, at least as a trial prior to surgery. Also, I would like to submit that thorough investigation into the etiology in dysmenorrheic cases will pay large dividends in time saved and results obtained, for it is certainly not scientific or medically desirable to administer treatment directed toward symptomatic relief without attempting to correct the underlying cause.

DISCUSSION

Dr. William B. Wiener, (Jackson)—Dr. Knox has given us an excellent paper on dysmenorrhea. This is a vast subject and due to the time element he could only touch on the surface. I would like to add a few words in regards to the treatment.

I certainly agree with Dr. Knox that one should try conservative therapy for quite awhile before surgery. In my limited practice, I have found that many young women with dysmenorrhea, single or married, have a very slight erosion around the external os of the cervix. By office cauterization of the cervix and instructions in the use of simple exercises, I have obtained very good results. The exercises take only a few minutes each day and can easily be carried out in any room. The following is a brief description as given by Haman.

"Position 1. The patient stands at a right angle to the wall at such a distance as will enable her to comfortably rest her left elbow on the wall on a level with her shoulder. The pelvis is tilted forward and while in this position the patient touches the wall with her hip, keeping her knees straight. Care must be taken not to twist the body or allow the elbow to slide up or down along the wall.

Position 2. The same procedure is repeated using the right elbow.

Position 3. The patient faces the wall against which she rests both elbows. The pelvis is tilted and the patient stretches until her pelvis touches the wall. The heels remain on the floor and the knees are kept straight."

These exercises are done three to ten times, three times a day. Usually after two to three months, sufficient relief of pain is obtained to discontinue them. However, sometimes the pain reoccurs and the exercises have to be resumed.

In the rare case of dysmenorrhea, when all conservative measures have failed, we think of surgery. In my training, I was taught that the abdomen should never be opened just for a superior hypogastric neurectomy. On the other hand, if a laparotomy is done for other pelvic surgery, such as a uterine suspension, ovarian resection or the like, then a neurectomy should be done for the dysmenorrhea. If you still think a laparotomy should be done just for the neurectomy, I would advise a test first, whereby ovulation is suppressed by giving an estrogenic substance cyclically for two to three cycles, for if pain is present with an ovulatory bleeding, I doubt that pre-sacral neuretomy would relieve the pain.

In doing a superior hypergastric neurectomy, all of the tissue in the triangular area over the sacral promontory between the bifurcation of the abdominal aorta should be removed. If only the one or two large nerve trunks are cut, there may be smaller ones which will carry pain impulses and so no relief will be obtained.

Recently, as has been mentioned by Dr. Knox, Dr. Brown of Dublin claims that some failure of superior hypergastric neurectomy was due to the fact that the dysmenorrhea was ovarian rather than uterine. He differentiated the two by physical examination. If the pain was reproduced by the passage of a uterine sound into the uterine cavity, he considered it to be uterine pain. If this produced no pain, yet pressure on the ovaries reproduced the menstrual pain, he classified this as ovarian dysmenorrhea.

After all has been said and done about dysmenorrhea, I believe it is here to stay as long as Mama and Grandmama tell daughter what to expect at the onset of her menarche. Likewise the ads for Lydia Pinkham's Extract and other allied compounds tend to increase its incidence.

Status Posthysterectomy*

Robert B. McLean, M.D., F.A.C.S., F.I.C.S.
Jackson, Miss.

Through the years general surgery has swung from: "Wish I could remove", through: "Maybe I can remove with low mortality", to: "Yes, I can remove", phases. Our mortality rates are lowered daily, but what about morbidity? With this thought in mind the first thousand major operations in an individual surgical practice were reviewed to find an operative procedure in which judgment could improve terminal morbidity. The old gag about the orthopedist makes him lead the profession in his choice of doing and not doing surgery. Now more and more of the general surgeon's mistakes stand on the street corners too.

Leading the list both alphabetically and numerically is, of course, appendicitis with 289 cases with six deaths. One death was due to embolus, one to uremia, one to aspiration pneumonia where tonsillectomy was done under the same anesthetic, one to pulmonary tuberculosis, and two due to peritonitis. That embolus and one other in a massive perirectal abscess plus two cases of thrombophlebitis in this thousand cases makes one wonder when to start anti-coagulants. The tonsillectomy, the tuberculosis, and the two late arrivals at the Charity Hospital do bring back memories. We still have late arrivals, but with the antibiotics after surgery, they have a much better outlook. Let me repeat: antibiotics after surgery. Not before, please. So far we know of no deleterious effects following removal of the appendix.

Cholecystectomies—31 with two deaths; cholecystostomies—4 with one death. We have seen the usual complete and permanent relief offered by cholecystectomy in the presence of stones displace the cholecystostomy except under extreme circumstances. We have removed gallbladders previously drained either after removal of stones or just drained. Perhaps we have felt unduly critical of the other fellow who drained that gallbladder years ago.

---

*Read before the Section on Surgery at the eighty-third annual session of the Mississippi State Medical Association. Biloxi, Miss., May, 1951.

Colostomies—13 with one death. Partial colectomies—8 with one death. This is too small a series to have any particular meaning. Those who were followed well enough to know were able to master their problems to a surprising degree. They were benefited by a prolonged life free of pain either temporarily or permanently. In those with only temporary relief the grand finale makes one wonder if the total result was good.

Ectopic pregnancies—7. There is one school of thought which believes that where ectopic pregnancy occurs both tubes should be removed whether grossly diseased or not. In three of these seven only one tube was removed, and two of these subsequently had normal pregnancies.

Gastrectomies—11 subtotals with one death. The two with carcinoma have been lost track of. One of those done for ulcer was a failure from the patient's standpoint because drinking beer still caused discomfort, and another because he could not eat as much shrimp remoulade as before. The general impression regarding results agrees with the accepted opinion that this is the operation of choice where medical management fails.

Hernias—97. It is regretted that a follow-up on these is incomplete. Dr. John Moorhead[1] used to say that any surgeon who was honest and kept records would have 6 per cent recurrences. One hopes that with this constructive operation his results are better.

Hysterectomies—161 with 91 supravaginal, 60 complete, and 10 vaginals. There was one operative death. That one was in the supravaginal group following an unsuccessful attempt to stop bleeding by the use of radium at a time and place that transfusions and antibiotics were not available. There was one carcinoma in a cervical stump diagnosed together with a fresh positive G.C. smear four months after hysterectomy for subacute recurrent salpingitis and metritis. However, there was also one carcinoma of the vagina following complete hysterectomy for fibroids and an endometrial polyp. Following x-ray therapy she was alive and well twelve years later. The two cases of thrombophlebitis previously mentioned occurred following hysterectomy. There were two incisional hernias. One dehiscence and secondary hemorrhage knocked hard on the door but lived. Incidentally, she had misrepresented the date of her last menstrual period by two weeks.

We need go no further in this first thousand majors to find our subject worthy of discussion.

The removal of the uterus and its appendages is an operation which can be expected to have effects other than the simple loss of an organ. Even more than loss of a leg, it calls for certain adjustments by the individual. So let us consider these effects.

Let us take 100 women who have lost their uteri and who have been closely followed from one to fifteen years, averaging four years. We will include the three related deaths. One died postoperatively. One died nine months after operation for carcinoma of the uterus of a highly anaplastic retroperitoneal tumor located above the left kidney but with no evidence of local recurrence; and there was the one who died of carcinoma of the cervix twenty-seven months after supravaginal hysterectomy. This leaves ninety-seven women who are normal except for their operation. Sixty-one do not have a cervix, thirty-four do not have an ovary. What was the final result?

The reasons for removal of the uterus were: papillary cystadenoma of the ovary, endocrine bleeding, metritis and salpingitis, subacute; metritis and salpingitis, chronic; endometriosis, fibroids, carcinoma of the uterus, massive ovarian cyst, prolapse, and endometrial polyp.

1. Papillary cystadenoma of the ovary—one case, age 26 years. This case was unilateral but the condition is usually bilateral and as you know is considered definitely premalignant. It was treated as such.

2. Endocrine bleeding—four cases averaging 31 years of age. These are always disappointments to the therapist, but not to the patients. They are justified only after failure of intensive cooperative therapy. Only the patient can say how much cooperation she gives or why not. One of these patients was 22 years old and was referred after several years of treatment for migraine, menorrhagia, duodenal ulcer, and the most abnormal dyspareunia imaginable. She would leave her bed and vomit loud and long. Her mother was a grass

widow of many years growth, and did all she could to prevent her marriage. Subsequent to the operation the patient became human and has adopted a child. Another was a case in which both tubes had been removed three years before in a conservative operation for endometriosis. The third case had had a bilateral salpingectomy for causes unknown, and the fourth was a 34-year-old multipara on whom therapy failed. The pathologist always wonders why the operation was done, but we have all seen multiple retention cysts when operating for other conditions in the pelvis, the puncture of which was associated with a temporary change in menstrual pattern. The pendulum of therapy is weightier with new endocrines and fewer of these cases are seen year by year.

3. Metritis and salpingitis, subacute—2 cases averaging 34 years of age. The additional diagnostic term, "recurrent", should be added. They were both entirely well and happy after operation, and in spite of losing both ovaries, neither had menopausal symptom number one in five and eight years postoperatively. Specifically, they were unaffected sexually.

4. Chronic metritis—7 cases averaging 35 years. Unless one is fortunate enough to get a positive smear, this group may be difficult to distinguish from the endocrine group before surgery. Should endocrine therapy be tried, response is diappointing.

5. Endometriosis—12 cases averaging 37 years of age. Bilateral oophorectomy cures the symptoms produced by this disease. When that procedure is necessary, it is felt advisable to remove the uterus also. However do not get the opinion that this operation is desirable for any other than the most severe cases of endometriosis. One case of endometriosis was first seen with a large ruptured chocolate cyst and intestinal obstruction that was operated conservatively and later had children, and still a larger group have been relieved of symptoms over a period of years by conservative surgery. Of course the largest group of endometriosis never come to need surgery. One month a cyst will appear on ovary only to go away the next. That classical thickening of the uterosacral ligament will appear but may go away. Where the menopause is kind enough to intervene, symptoms invariably go away. In spite of various articles and theories, the increase in frequency of this condition is baffling. One fact has been noted: the severity of menopausal symptoms following bilateral oophorectomy is consistently greater than when the operation is done for any other cause. And yet two of the twelve have had no menopausal symptoms for two and eight years respectively. Ain't nature grand!

6. Fibroids—59 cases averaging 42 years of age. They are peculiar growths. One was seen to make its appearance and reach the size of a four-month pregnancy in six months. (No, it was not hollow, and did not contain a foetus on removal.) On the other hand a fibroid-studded uterus the size of a three-month pregnancy in a woman of 32 has been observed over a period of ten years to decrease in size to that of a normal uterus without a palpable blemish or a recognizable symptom. Consequently, they were removed only when bleeding, producing dyspareunia or unquestionable pressure symptoms, or in women past the menopause with a degenerating nodule or prolapse. Irregular tumors larger than a two-month pregnancy at the menopause usually do produce symptoms. It used to be felt that large fibroids were related to myocardial disease, but the pendulum has reversed. However, there is at least one in this series whose hypertension disappeared one year following hysterectomy. Here again all fibroids do not require the removal of the uterus. Myomectomies can frequently be successfully done for bleeding in the younger women, and also they can be done successfully for tumors producing repeated abortions.

7. Carcinoma of the uterus—3 cases averaging 52 years of age. The patient who died nine months postoperatively has been referred to. The other two had complete hysterectomies with bilateral salpingo-oophorectomies. Both are living and well three and ten years later respectively.

8. Massive ovarian cyst—one case age 50. This colored woman had been told to expect a baby several months back. The cyst was certainly as large as a full term pregnancy. The small uterus was adherent to the lower anterior surface and it was technically simpler to remove the uterus with the tumor than leave it.

9. Prolapse—ten cases averaging 52 years of age. There were eight vaginals and two complete abdominal hysterectomies with one

requiring a perineal repair. One of these was a 54-year-old nullipara.

10. Endometrial polyp—one case, age 82 years. This case demonstrated the fact that uterine curettement is most undependable. Two of us curetted this uterus to diagnose the cause of bleeding without satisfaction, so the uterus was removed and found to contain a sessile polyp the size of a thumb digit. It was not scratched. It was benign.

Anatomically the result was excellent in 89 cases, good in 4, and poor in 4. Of the latter, one required cystocele repair, one rectocele repair, and the third had a high vaginal stricture giving a false shortening of the vagina to two inches. She assured me that this was due to the age of her husband. The fourth was the ureter which was cut and repaired. Follow-up showed some constriction, but a year later there were no symptoms.

From the sexual standpoint the married women considered their libido normal in 85 per cent of the cases, increased in 10 per cent, and decreased in 5 per cent. Of those reporting an increase, seven out of the eight had their cervices. One was operated for recurrent salpingitis, two for endometriosis complicated by dyspareunia, one was the glandular catastrophe previously referred to, and five were fibroids of whom two complained of dyspareunia preoperatively. Having known these cases over a period of years, it is most probable that Duboise, as quoted by Graves[2], is correct in saying that, "In women, the psychic element is more powerful than the somatic". This does not support Catell's[3] opinion that the cervix should be widely coagulated from below and the rim left in place in recognition of its somatic effect. From the standpoint of normalcy in the sexual act, no complaint was made in this group which was not relieved by one tube of lubricating jelly. Of those reporting a decrease in libido half retained their cervices, half lost them. None complained of dyspareunia after using the lubricant.

Menopausal symptoms excluding amenorrhea in the 90 cases operated before menopause were absent for over a year in 61 per cent where one or more ovaries were retained and in 10 per cent where both ovaries were removed. They were mild in 3 per cent of those where one or more ovaries were retained and 8 per cent where both ovaries were removed. They were not severe in any of those who retained one or more ovaries, but were severe in 18 per cent of the other group. Menopausal symptoms coming on after one year compared more than favorably with the normal menopause because of the absence of abnormal bleeding and the fear of pregnancy.

The pendulum has swung toward complete rather than supravaginal hysterectomy because of the minimal estimated 1.1 per cent carcinoma of the cervical (Ward[4]) irrespective of parity, coning from above, or cauterization from below (Meigs[5]). This swing is logical because of the decrease in mortality from the old high percentage to the new low percentage. Regarding the question of retaining normal ovaries, Aldridge and Meredith[6] express the opinion that patients are more able to adjust to the psychological changes produced by the loss of the uterus if the ovary is retained. Allen and Hertsig[7] reported malignancy in 15 per cent of the ovaries in 1740 specimens removed. Only 5 per cent of these proliferative tumors were smaller than 5 cm. Surely the inspection of the ovaries with removal of any gross deviation from normal would make a malignancy of the retained ovary such a rarity that it would be worth the risk to avoid severe menopausal symptoms. Three of this bilateral oophorectomy group had severe psychosis.

The lack of effect of oophorectomy on chronic cystic mastitis in this study has been amazing. On the contrary, the impression is held that unilateral oophorectomy fosters the condition, but additional analysis would be necessary to prove it.

The appendix was routinely removed in these cases and in only one instance was there any recognizable difficulty attributable to it. In that case intestinal obstruction developed seven months later and was found due to an adhesion of the ilium to the site of the inversion dimple of appendectomy.

In summary, this study would suggest that when it is necessary to remove the uterus the cervix should be removed unless definitely contraindicated, but that one or more ovaries should be retained unless the pathology present demanded their removal.

BIBLIOGRAPHY

1. Moorhead, John J.—while operating.
2. Graves, W. P. TEXT—1926, P. 130.
3. Cattell, Richard B.—while operating.
4. Ward—Am. J. Obst. and Gyn. 40:780, 1940.
5. Meigs—White, Dexter H.: Jour. Int. Surg., Vol. 25, P. 313, March 1951.
6. Aldridge, A. H. and Meredith—Amer. Jour, and Gyn, V 59, P 748.
7. Allen, M. S. and Hertsig, A. T,—Am, J, Obst, and Gyn, V. 58, P. 640.

Dr. Archibald C. Hewes—(Gulfport)—I appreciate being the first to have the opportunity to congratulate Dr. McLean on this paper..

Since Dr. McLean and I are almost in one hundred per cent agreement, I will only emphasize a few pertinent points which he has already brought out.

The conscientiousness of Dr. McLean's criteria for operation is attested by the rarity in which he operated on the patient for endocrine bleeding. He operated on only four cases in his 161 gynecological surgical cases. Even with the new hormones, the results of medication are none too good and the doctor too frequently subjects his patients to major surgery. I should like a little more detail from Dr. McLean in how he handles these cases. Do you use a currette to ward off major surgery?

I do believe that surgery is the principle treatment in endometriosis and conservatism is the principle aim. In women under thirty-five years of age, operations should be done early while surgery is still feasible, and the child birth function is still possible. In women who already have their families and are over thirty-five years of age and should conserve ovarian tissue, but do a hysterectomy. In women over forty-five years of age, if emotionally stable, then a bilateral oophorectomy might be permissible.

As stated by Dr. McLean, fibromyoma per se is not an indication for surgery. One cannot use the argument that these tumors should be removed because of the possibility that they may become malignant, when only seven-tenths per cent of fibromyoma take on a malignant change; this is about the same mortality as that for doing a hysterectomy. Dr. McLean in his paper has laid down a good criterion for surgery in the presence of a fibromyoma.

Let it be emphasized again that ovaries should be preserved whenever possible. Dr. Seegar Jones has proved experimentally that the removing the uterus does not cause the ovaries to cease functioning. Castrated women are the most pitiful cases we see. Some women who are deprived of their ovarian function prefer death by suicide, others become hopeless addicts of drugs, others in their unhappy state become financial burdens to their family, running from one doctor to another, because of their hypochondriac symptoms.

A few years ago I heard a doctor's report on an investigation conducted in the mid-West on hysterectomies. He found that one-third of the hysterectomies not only could be justified pathologically, but their clinical record gave no adequate excuse for surgery. This type of hysterectomy he properly called "Hip-pocket hysterectomy". It is a pity that a hysterectomy carries such a low mortality rate, thus inviting the unscrupulous, untrained man to operate.

Dr. Walter Lipscomb—(Jackson)—The excellent paper by Dr. Robert McLean covers the subject of the posthysterectomy patient admirably. Dr. McLean has also given us a partial review of 1,000 cases of general surgery with results in these cases. I am sure anyone doing general surgery for a number of years can appreciate his reference to results before the antibiotics were available and no blood bank for immediate transfusion. I still consider myself one of the younger surgeons but think of the advances that have been made in the past 22 years. Chemotherapy, antibiotics and blood are now available almost anywhere. Operative technique has not changed so greatly but our results have improved and we can now do surgery with much less morbidity and mortality.

Supravaginal hysterectomy was almost routinely done twenty years ago. Total hysterectomy was reserved for the carcinoma of the fundus of the uterus or extremely lacerated or diseased cervix. In the past ten years the pendulum has swung and the vast majority of hysterectomies are total; either by the abdominal route or vaginal depending upon the indication for the surgery, the preference of the operator, or whether or not there is an indication to explore the abdomen. The vaginal hysterectomy has a definite place and should be done in the majority of elderly women particularly if they are obese. Shock following the vaginal operation is much less.

Although cancer of the cervical stump occurs in a relatively small percentage of cases in which the stump is retained, cervicitis, cervical erosion and associated vaginitis are relatively common. When bleeding, mucopurlent discharge, prolapse and dyspareunia occur the stump should be excised. Healing is generally without complications.

When hysterectomy is done I prefer total hysterectomy unless there is some contra-indication.

Health Progress in Mississippi

Felix J. Underwood, M.D., Executive Officer
Mississippi State Board of Health

(Guest Editorial)

Life in Mississippi during 1952 will be as safe as in any state in the union and much safer than in many countries of the world. Thirty years of unrelenting efforts through sanitation, immunizations, early case finding, laboratory diagnosis and public health education by public health workers now give Mississippi a clean bill of health for the drastic reduction of the more prevalent communicable diseases.

Health department services have been extended to 80 of the 82 counties in the state — only Walthall and Webster not having appropriated funds for these services. This means state-wide coverage in basic public health services. Twenty-one health department buildings, including main health centers and branches, have been completed under the hospital-center construction program.

Communicable Diseases

The earliest figures on record for causes of death are for the year 1913 and the latest figures available are for 1950. A comparison of figures for this thirty-year period is a consistent report of progress. In 1913 there were 659 citizens who died of typhoid fever; in 1950 there were only two deaths from this disease. In 1913 there were 1,264 deaths from malaria and in 1950 only two. The highest number of deaths from pellagra was in 1915, in which year this disease brought death to 1,535 citizens; in 1950 only 17 deaths were reported from pellagra. The greatest number of deaths from tuberculosis was in 1917, when 2,743 citizens died of tuberculosis; in 1950, deaths from tuberculosis were down to 558.

As a result of more universal immunizations, diphtheria now has the lowest incidence in the history of the state with 121 cases reported in 1951. The lowest in previous years was 269 cases in 1948. There were only nineteen cases of typhus fever in the state during 1951, which number indicates control of this disease when compared with 235 cases in 1945.

Incidence of other communicable diseases was at an all time low as is shown by the following figures of confirmed cases during the period July 1 through December, 1951: malaria 42, tularemia 9, brucellosis 24, schistosomiasis 1, Rocky Mountain spotted fever 4, meningitis 10, encephalitis 1.

Of the forty-two confirmed cases of malaria, apparently only one was acquired locally; the other 41 cases were among soldiers who had been infected in Korea and had returned home with the infection. Polio was at the highest peak of any year with 728 cases reported late in December. Two hundred and ninety-three cases were in five counties. Public health has no reliable control measures for the prevention of polio since the means of transmission has not been established.

Tuberculosis is the only highly communicable disease which still appears among the leading causes of death in the state. Finding of cases in the early stages is the most effective means of arresting the progress of the disease in individuals and in preventing its spread to others. Measures for its control are known but the educational process with the people in personal hygiene and sanitation for tuberculosis control has been tedious. It has only been in recent years that the number of sanatorium beds has been at all adequate.

In the last six months period only 242 cases of primary and secondary syphilis could be found in the state. This is about one-eighth as many cases as were found in the same period in 1946. Mass blood testing and rapid treatment methods are responsible for the control of this contagious disease. Without discovery and proper treatment of these cases, many would become permanent public charges in mental institutions or remain physically incapable of making a contribution to the economics and growth of the state.

Heart Disease and Cancer

A more intensive attack has been made against heart disease, the leading cause of death in the state, and cancer, the third leading cause of death.

A heart disease control program is being sponsored by the state medical society and the state board of health. Its aim is early case finding of heart conditions which are amenable to treatment. A study of predisposing causes is being made by the medical profession, and an educational program for the public in the citizen's opportunity to help prevent advanced heart disease conditions is being developed. According to latest statistics, heart disease did not claim the usual high incidence in 1950 over 1949, as there were only 50 more heart disease deaths in 1950 than in 1949. The problem is still great, however, since there were 5,546 deaths in 1950 from heart disease.

From April 1 through November 26, 1951, there were 1,648 patients referred to the five approved cancer clinics. The latest available figures show 2,143 deaths from cancer in 1950. There were 104 more deaths from cancer than in 1949. Better diagnosis doubtless accounts for part of the increase in cancer deaths today.

Professional seminars for the physicians have been held throughout the state in order that physicians might give their patients the benefit of the most recent scientific knowledge in cancer treatment. With the citizens throughout the state stress has been placed on early case finding, since it is an established fact that cases found in the earliest stages have a better chance for cure.

Maternal and Infant Deaths

The first year of life, a very hazardous time, has been made much safer, as is shown in the lowered infant death rate. There has been a fifty per cent reduction in infant deaths over the period 1920-1950. In 1920 the infant death rate was 80.0 per thousand live births and in 1950 it was 36.4 per thousand live births.

Sanitation, immunizations, construction of hospitals, increased medical services from private physicians and increased percentage of mothers delivered by physicians in hospitals has had a great effect on the reduction of maternity deaths. Mississippi's hospital construction program is providing increased facilities so that lack of hospital beds need not cause maternal and infant deaths. The latest figures available, those for 1950, show that 83 per cent of all white births occurred in hospitals and 14.6 per cent were delivered by physicians in the home.

The leading causes of maternal deaths are toxemia, hemorrhage and infection. Hospital delivery and good prenatal care of the mother, including proper diet, make childbirth safer for the mother. The death rate for white mothers is about the average for the nation; however, the death rate for Negroes is three times the national average. The rate for Negro mothers delivered in hospitals rose to 18.8 in 1950.

School Health

Child guidance, nutrition, and dental hygiene services have been made available on a district basis. Children in Mississippi may expect to have better teeth as the result of dental health education, the addition of fluorides to city water supplies, and the application of sodium fluoride to the teeth.

Over 2,423 school children had medical services in the form of correction of physical defects in the last six months period alone. No school child today needs to go with physical defects which prevent his progress in school.

Health Education

Thousands of Mississippians each year request information on good health—how to acquire it and maintain it. Schools, PTA groups, and civic clubs used hundreds of health films and pamphlets last year. Also newspapers, magazines, and the radio carried valuable information designed to help the average citizen understand his health problems and teach him how to deal with them. The well-stocked medical library supplies both professional and lay people with reliable, up-to-date books and periodicals on health and medical subjects.

Sanitation

Sanitation services are directed toward assuring the public of safe food, water, and milk supplies. Improved garbage and sewage disposal have been stressed and efforts continue in supervision of the fluoridation of city water supplies, sanitation of the shellfish industry, school lunchrooms and dairies.

Industrial Hygiene

Working conditions in industrial plants have been greatly improved through chemical analyses of processes used through recommendations on plant ventilation and engineering processes protecting the health of the worker. Physical examinations, immunizations, nursing and medical consultations have all contributed to the health of the industrial worker.

With more and more industries coming to Mississippi under the BAWI program, an increasing number of industrial workers will be found in the state. The health of this type of worker must continue to receive special attention.

World-Wide Recognition

Mississippi's public health program has had world-wide recognition as witnessed by the large number of public health officials from other countries who have visited Mississippi during the past year. From June to December of 1951 there were thirty-three visitors from Europe, Africa, Asia, South America, Australia, India, China, Japan, Indonesia Thailand and governments of Rukuya and Western Germany.

The Importance of the Rectal Examination

Harwell Wilson, M.D.†
(Guest Editorial)
Memphis, Tennessee

The necessity for a careful examination of the rectum has been mentioned by clinicians on numerous occasions. The importance of this examination, however, has not been overemphasized.

Information gained by this procedure may allow the physician to discover a cancer at a time when the disease is curable. A careful rectal examination will on many more occasions enable the clinician to find the source of a non-malignant difficulty and thereby permit therapy which will afford the patient much appreciated comfort.

The examination should, of course, be preceded by a careful history regarding this area. The examination should then be carried out in a thorough and orderly manner and when done usually causes the patient little discomfort and yet may afford him much benefit. A careful inspection of the external anal area with the patient relaxed and also with the patient straining slightly is the first step in the procedure. This may reveal the presence of a fissure, a fistula, or of an external hemorrhoid. On some occasions patients who come complaining of agonizing pain in the rectum are found at this stage of the examination to have an infected thrombosed hemorrhoid, the clot from which may be easily and painlessly evacuated with 1 cc of procaine hydrochloride and a scalpel. Digital examination should follow inspection. The well lubricated gloved finger should gently and carefully explore the rectal ampula.

The knee-chest position or the inverted position on the tilt table makes inspection easy. A tumor located relatively high in the rectum is more apt to be felt if the patient is supine or lying on his left side since it often tends to fall forward when the patient is inverted.

Visual inspection of this area should include the use of both the anoscope and the proctoscope. The anoscope allows one to examine the anal canal and may show the presence of numerous benign lesions which are susceptible to correction by simple office measures and it will also occasionally allow one to view a low lying malignancy. The proctoscope allows one to easily inspect the entire rectum with safety. It is, of course, absolutely necessary to have the area clean before it can be visualized.

In previous years it was often facetiously said that, "It is the function of the consultant to do a rectal examination." It can be truly said today that it is the duty of every doctor to make a rectal examination who assumes the responsibility of performing a physical examination.

---

†Department of Surgery, The University of Tennessee

BOOK REVIEW

An authoritative 12-page instruction booklet on the care of the bed patient's skin, titled "On Guard Against the Wear and Tear of Lying Abed" is just off the press.

This concise, explicit little book has been prepared by two nursing instructors for the guidance of graduate or student nurses, and to save time in directing home nursing procedures. It covers:

The skin and its functions, care of the skin, general and local effects of dry skin, prevention and care of skin irritations, which may result from frequent washing.

Copies are available now in any desired quantity to physicians, hospital administrators, graduate nurses, nursing instructors. Distributed without charge by Edison Chemical Company, 30 West Washington, Chicago 2, Illinois.

As an added convenience to physicians requesting 50 or more copies name, address, and office hours will be imprinted on booklet without cost.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. B. S. Guyton .... Oxford
President
Dr. J. G. Thompson .... Jackson
President-elect
Dr. T. M. Dye .... Clarksdale
Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
John G. Archer, M.D. .... President
Greenville, Miss.
H. T. Smith .... President-elect
McGehee, Ark.
L. T. Carl, M.D. .... Vice-President
Jackson, Miss.
D. T. Owens, M.D. .... Vice-President
Harrison, Ark.
Luke W. Nabors, M.D. .... Vice-President
Morristown, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

THE MID-SOUTH MEETING

The scientific program of the Mid-South Postgraduate Medical Assembly promises to be good as usual. Dr. John Archer of Greenville, Miss., the president, will carry the meeting through with ease and efficiency. He has arranged for a fine meeting for the Past President's Club, when Dr. R. B. Robins of Camden, Ark., will be the chief speaker. This will be something for the past presidents to look forward to. We hope every one will be present. You have noted the list of exhibitors in a past issue of the journal. They have been a big factor in building this great medical assembly. Dr. Gilbert Levy has rendered the association a wonderful service in handling the exhibits. The program is also evidence of splendid work on the part of the program committee.

The Mid-South gives the busy doctor a summary of the very latest and best in medicine and surgery in a four-day course. No doctor can afford to miss it if he can manage to go. The meeting is good for him and good for his clientele.

The fraternal spirit in Memphis is very fine. There is a good medical atmosphere and a medical school which is one of the best all-round schools in this nation, keeping step with the needs of the doctors and the people. It is a practical and well balanced school whose atmosphere and faculty warrant an excellent professional relationship. The doctors of Memphis always extend a cordial and helpful hand. The city of Memphis is one of the fastest growing in the nation. Its people are cultured, refined, and very friendly.

Don't miss the Mid-South, February 12-16.

THIS OR SOMETHING WE WANT LESS

Our state legislature is now in session. At the outset Governor White praised our public health department and urged adequate means to carry it on. We have a four-year medical school in the making and our governor is for it. The indications are that our state will have one of the best schools in the nation. The per capita distribution of funds for the indigent sick was inaugurated under Governor White in his first term. This plan is fair and just and was a big step forward for the unfortunate sick of our state. This plan, however, now needs revision. With the advance of inflation the per capita allowance is inadequate. A flat rate would perhaps be the best solution. If a person is accepted as charity he should be treated as his needs demand. The hospital costs should be reasonable and the doctor should be willing to continue to treat the indigent patient without charge as he has been doing. This charity patient may have paid liberally in taxes to build the medical school we have and other educational institutions that have served him. If one person in the state deserves to be cared for by charity, all in his class deserve the same treatment.

It is good human economy for every sick person to have good medical treatment. We trust that more adequate funds may be made available by the legislature at this session. We trust that every doctor in the state will be free to do his full duty to the unfortunate sick, realizing that he is obligated to our educational institutions and to society in general, and further realizing that his ungrudging service to the unfortunate will help greatly in staying off regimentation in medicine which would be most unfortunate for all.

News and Comment

THE PRESIDENT

Dr. Archer

Doctor John George Archer of Greenville, Mississippi. Educated at Vanderbilt, where he received his B.S. degree in 1912, he went to the University of Pennsylvania for his M.D. degree, graduating in 1916. From the same university his great-great-grandfather, also named John Archer, was the first graduate of medicine in America (Univ. Pa. 1768).

Doctor Archer's activities include: former chief of staff, King's Daughters Hospital, Medical Society; former vice-president from Mississippi to Mid-South Postgraduate Medical Assembly; local surgeon for Illinois Central Railroad; former governor for Mississippi to American College of Physicians; chairman, Medical Advisory Board of Education of Selective Service Board, Washington County, World War II; former member of the Advisory Committee on Heart Disease Control of the State Medical Association; Secretary, Mississippi Heart Association; member of American Legion, Forty and Eight, and member of Trinity Methodist Church; fellow of the American College of Physicians; member of Delta Medical Society; Mississippi State Medical Society, American Medical Association, Southern Medical Association, Mid-South Post-graduate Medical Assembly, Captain Medical Corps, World War I (foreign service), and member of Doctors Gamble Brothers and Archer Clinic, Greenville, Mississippi.

Dr. John Archer is not only well born in medicine, thoroughly trained and painstaking in his practice, but he also has a sincere human understanding and interest. He loves the practice of medicine, he loves folks, and he is interested in building human assets adequate to meet any needs that may arise. His heart is kind, his hand is generous. He is a fine Christian citizen in every good cause in his community. A valuable and loveable man, the Mid-South is honored to have him as its president.

DR. MATAS HONORED FOR SERVICE TO MEDICINE

A fellowship in the American College of Surgeons was bestowed upon Dr. Rudolph Matas, professor-emeritus of surgery at Tulane University and one of the world's renowned surgeons and teachers.

The fellowship was conferred by Dr. Alton Ochsner, president of the American College of Surgeons and Tulane University surgery professor, at a ceremony in the residence of Dr. Matas at 2255 St. Charles.

Dr. Matas, who served as president of the College of Surgeons in 1925, is the first man ever intimately associated with the College of Surgeons to receive the award.

Dr. Ochsner said at the presentation that the fellowship was voted unanimously by the regents of the College of Surgeons for "its most distinguished member," and one of its founders.

A small group of Tulane University officials and friends attended the ceremony at which the 91-year-old Dr. Matas was honored.

Dr. Matas, whose fame in vascular surgery was based on original research and who is known to the medical world as the "father of vascular surgery," is a member of all of the outstanding surgical societies of the world and has an honorary fellowship in the Royal College of Surgeons of England, Dr. Ochsner said.

Dr. Maxwell E. Lapham, dean of the Tulane University medical school, said it is noteworthy that Dr. Matas' successor as professor of surgery at Tulane and president of the American College of Surgeons, Dr. Ochsner, has the distinction of conferring the fellowship on another Tulanian who also served as president of the College of Surgeons.

Dr. Matas said that it has always been the tradition of the American College of Surgeons "to build up men fitted to carry on the flaming torch of progress handed to them by their predecessors.

"To this end, it has and is endeavoring to stimulate the cultivation of a surgical conscience. By this we mean not merely a consciousness of what is wrong with our technics, but with the morals that guide them. The surgical conscience is the fruit of knowledge, training and culture in the science and art of surgery, and the purely technical sense, can be developed and highly cultivated." Dr. Matas said.

"The moral conscience is that intangible something, 'the still, small voice' that, rising from the depths of our innermost selves, whispers its warnings when we are doing wrong. It is the spirit of ancestral generations which, whether good or bad, is housed in us while in transit to our successors. Conscience is therefore an inheritance; and the seed of good or evil is implanted in us with our birth. Like other seeds, it will thrive when well cultivated, or it may atrophy or perish when it is planted in sterile soil. It is therefore influenced, for better or for worse, by the conditions and laws of its environment.

"The majority of those born of normal, healthy, honest and decent parents have the right seed sown in them when they are born. But conscience is erratic. Some people it misses altogether. They are born without the spark that brings it into existence. In others it is so small and atrophied that it becomes like the appendix, a useless and dangerous nuisance which might as well be cut out altogether.

"When a man wakens to the ring of his conscience, he gets to work and starts to put his house in order, we may say he has character. Character is the will to put into action what the voice of conscience has roused in him. Conscience, without the will to act upon its biddings, is powerless and might as well be dead.

"When a man has neither conscience nor character, he cannot be a good man, and if he is not a good man he cannot be a good surgeon. And no matter how skillfully he may take out appendices, and gall bladders, resect stomachs, do hernias, and other fine jobs in surgery, we don't want him, and he need not apply for Fellowship in the American College of Surgeons, for he will not be accepted."

OLE MISS CHAPTER OF STUDENT AMA

William Kellum, Tupelo, succeeded Carl Nichols of Rosedale as president of the University of Mississippi chapter of the Student American Medical Association in its January meeting. Creighton Wilson, Batesville, was elected vice-president, Rex Hulsey, Hattiesburg, secretary, Ed Johnson, Long Beach, treasurer and Dick Schuster, reporter.

During the meeting Wilson gave a report on his attendance of the national convention of the Student American Medical Association held in Chicago, Illinois, during the Christmas holidays. The convention was attended by student leaders from over 50 of the nation's 73 medical schools. The organization functions to promote the general welfare of the medical student and has been continually striving to improve their lot since the Association's establishment in 1950.

Retiring officers other than Nichols are John Patterson, Fulton, secretary, Park Jerdine, Jackson, treasurer, and Robert Hodges, reporter.

Meetings of the organization are held in the Medical School on the first Friday of every month throughout the year.

POSTGRADUATE COURSE FOR MISSISSIPPI ASP

On February 19 and 20 at the Lutheran Hospital, Vicksburg, Mississippi, the School of Medicine of the University of Mississippi will offer a two day course on "The Development of the Doctor's Office as a Cancer Detection Center", in association with the staff of the Lutheran Hospital and Vicksburg Clinic.

This course of study has been provided at the specific request of the members of the Mississippi Academy of General Practice and under the guidance of their president, Dr. S. K. Johnson, and their Committee on Education.

This exhibition of intelligent planning on the part of so well organized and able a group is of good omen for the continued future development of medicine in this state.

The program arranged jointly by the dean of the University School of Medicine, Dr. S. K. Johnson, president of the Academy and his Committee on Education, and Dr. Willard Parsons, is designed at University level and is intended to be of especial appeal to the general clinicians.

DATE: February 19 and 20, 1952

PLACE: Lutheran Hospital, Vicksburg, Miss.

TUITION: $10.00

NOTE: A block of rooms have been reserved at the Vicksburg Hotel. Physicians are responsible for their own hotel reservations.

FIRST SESSION

9:00 to 11:00 a.m.
Attendance at the regular weekly meeting of the Tumor Clinic, Lutheran Hospital, with presentation of patients and discussion by the staff as to diagnosis and treatment. W. H. Parsons, M.D., presiding.

11:00 a.m. to 12:00 noon
'Symptoms and Signs that Should Lead the Medical Man to Suspect Cancer".
W. K. Purks, M.D., presiding

12:00 noon to 1:00 p.m.
Lunch, Cafeteria, Lutheran Hospital

1:00 to 2:00 p.m
"Carcinoma of the Gastrointestinal Tract"
W. H. Parsons, M.D., presiding

2:00 to 3:00 p.m.
"Roentgenologic Studies of the Gastrointestinal Tract".
F. J. Hamernik, M.D., presiding

3:00 to 4:00 p.m.
"Demonstration of Gross Specimens of Carcinoma of the Large Bowel with Correlation of the Clinical Picture."
R. M. Moore, M.D., presiding

4:00 to 4:30 p.m.
"Nitrogen Mustards in the Treatment of Malignancy."
W. K. Purks, M.D., presiding

4:30 to 5:00 p.m.
Round Table Discussion, Dr. W. V. Hare, Professor of Pathology, School of Medicine, University of Mississippi

SECOND SESSION

8:00 to 11:00 a.m.
Surgical Clinic by Dr. Willard H. Parsons and Staff. Preoperative discussion of patients by attending surgeon and all the consultants.

11:00 to 12:00 a.m.
"Treatment of Malignancies by Roentgen Therapy"
F. J. Hamernik, M.D., presiding

12:00 noon to 1:00 p.m.
Luncheon, Cafeteria, Lutheran Hospital

1:00 to 2:00 p.m.
"What May the General Practitioner Expect of the Pathologist and the Clinical Laboratory with Particular Reference to the Technic and Value of Biopsies and Cytologic Studies."
R. M. Moore, M.D. and E. S. Thomas, M.D., presiding

2:00 to 3:00 p.m.
"Diagnosis and Treatment of the Leukemias, Lympholastomas, etc."
W. K. Purks, M.D., presiding

3:00 to 3:30 p.m
"What Should Lead One to Suspect that Malignancy of the Bone Exists and What Should be Done about It?"
J. M. Moore, M.D., presiding

3:30 to 4:00 p.m.
"Malignancies of the Uterus with Particular Reference to their Prevention"
I. C. Knox, Jr., M.D., presiding

4:00 to 4:30 p.m.
"The Role of the General Practintioner in the Management of Carcinoma of the Lung"
W. H. Parsons, M.D., presiding

4:30 to 5:00 p.m.
Round Table Discussion
W. V. Hare, M.D., presiding

SOUTHEASTERN SURGICAL CONGRESS

A joint meeting of the Southeastern Surgical Congress and the Atlanta Graduate Medical Assembly will be held March 10, 11, 12, 13, 1952 at the Atlanta Biltmore Hotel, Atlanta, Ga. Write to the hotel manager for reservations.

ANNOUNCEMENTS

The Vicksburg Clinic, Vicksburg, Mississippi, announces the admission of James A. Kiely, M.D., to partnership.

J. Dana Darnley, M.D., announces the opening of his office for the practice of neurology. 746 Manship Street, Jackson, Mississippi.

Forrest G. Batley, M.D., Diplomate American Board of Pathology, announces the opening of his office on December 1, 1951, for the practice of Pathology. 1004 North Street, Jackson, Mississippi.

Cancer Seminar

The Division of Training of the Cancer Cytology Center of the Dade County Cancer Institute, an affiliate of the Medical Research Foundation of Dade County in Miami, Florida, announces its second one-week seminar for physicians to be held at the Institute from April 21 - 25 inclusive and immediately preceding the annual convention of the Florida Medical Association.

Interested physicians should direct their inquiries regarding qualifications, registration, fees and other details to the Director of the Dade County Cancer Institute at 1155 North West 14th Street, Miami, Florida.

Applications for registration, limited to 35 physicians, will be accepted through April 19.

FOR SALE

Profex Vertical Fluoroscope. Less than two years old. Guaranteed. $595.00 installed.

F.C.C. Approved Diathermy. Less than one year old. Guaranteed. $595.00 installed.

Box No. 42, Mississippi Doctor

FOR SALE

50 MA Fischer X-ray Machine, complete with Hand Tilt Table and Bucky. Guaranteed $1000.00 installed. Used.

Beck Lee String Electrocardiograph. Used guaranteed. $250.00 installed.

New Sanborn Metabulator. $350.00 installed.

Box No. 42, Mississippi Doctor

WANTED TO LOCATE IN MISSISSIPPI

It is my desire to practice medicine in a good community where I may settle permanently in Mississippi. At present I am interning at the Methodist Hospital in Memphis, having completed my medical training at the University of Tennessee Medical School in June, 1951. Information as to possible openings in the state would be appreciated.

Robert M. Akin, M.D.
241 South Cleveland Street
Memphis, Tennessee.

DEATHS

DR. J. D. SIMMONS

Dr. John Douglas Simmons of Cleveland died Christmas Eve at the local hospital after an illness of three years.

Services were held at 10 a.m. Wednesday at the Cleveland First Baptist Church with Rev. R. A. Bolling officiating, assisted by Dr. W. H. Clarke, also of Cleveland, the Rev. I. D. Eavenson of Marks, Miss., the Rev. Charles Treadway of Columbia, Miss., and the Rev. E. G. Evans of Benoit, Miss. Burial followed in the Cleveland Cemetery with Fletcher Funeral Home in charge. Dr. Simmons was 60.

He was born in Pontotoc, Miss., but had lived in the Delta 36 years. He was a member of the Cleveland Baptist Church and a deacon. A graduate of the University of Mississippi, Dr. Simmons received his medical degree at Tulane in New Orleans. He was a member of Delta Psi and Alpha Kappa Kappa Fraternities, Delta Medical Society, Southern Medical Association and the American Medical Association.

During World War I, Dr. Simmons served as a first lieutenant in the Medical Corps. He was a Mason, Shriner, member of the American Legion organization and 40 et 8, and past member of the Cleveland Exchange Club. In 1916, he began his practice of medicine at Gunnison, and after 20 years there came to Cleveland to practice.

He leaves his wife, Mrs. Emmye Bowe Simmons of Cleveland; a son, R. Simmons of Birmingham, Ala.; two daughters, Miss Emmye Bowe Simmons and Miss Carolyn Bruce Simmons, both of Cleveland; two brothers, L. G. Simmons of Pontotoc and H. S. Simmons of Tupelo, Miss.; and two sisters, Mrs. Paul E. Bradley of Joplin, Mo. and Mrs. James Morris of Jackson. He also leaves two grandchildren.

DR. W. JEFF ANDERSON

Dr. W. Jeff Anderson, owner and operator of Anderson's Infirmary in Meridian, and prominent in Mississippi and Southern medical circles, died suddenly in the doctor's dressing room of the infirmary on December 19, as he prepared for surgery.

Dr. Anderson, who was 79, was the brother of the late Mrs. John Harrison of Jackson who died a few months ago.

He had been a physician 50 years, was a graduate of the Tulane University School of Medicine, member of the Mississippi 50-Year Club of physicians, and a charter member of the Mississippi Chapter.

Survivors include a son, Dr. W. J. Anderson, Jr., who was with him when he died, and a daughter, Mrs. E. M. Hollingsworth of Meridian.

DR. D. S. SMITH

Dr. David S. Smith, 69, prominent Mississippi physician, died in a Vicksburg hospital after an illness of two months.

Dr. Smith is survived by his wife, Mrs. Stella McGraw Smith, Utica; two daughters, Mrs. Paul L. Heflin, Utica; Mrs. C. R. Hine, Jr., Forrest City, Ark.; one sister, Mrs. T. H. Heard, Utica; one brother, George J. Smith, Vicksburg; four grandchildren and a number of other relatives.

Dr. Smith was born in Utica and attended public school there. He was a graduate of the old and new University of Tennessee School of Medicine. He practiced medicine for 40 years at Rodney, Vicksburg and Mounds, La., and for the last ten years at Utica.

Dr. Smith has many friends in and around Utica who are grieved over his death and extend sympathy to his family.

DR. WILLIAM WIGGINS

Dr. William Edley Wiggins, well-known physician of Indianola, died December 23 at the King's Daughters Hospital in Greenville after a long illness. He was 65.

Services were held at his home with Rev. Walter Hall officiating. Burial was in the Indianola Cemetery.

Dr. Wiggins was born in Choctaw County, son of the late Mr. and Mrs. T. M. Wiggins. He attended the French Camp Academy and received his medical training at the old University of Nashville.

He leaves his wife, Mrs. Arlin Wiggins; two daughters, Mrs. Lee Cossar of Leland and Mrs. Sid Gilliespie of Phoenix, Ariz.; two brothers, Dewey Wiggins of Indianola and Jim Wiggins of Cleveland and two sisters, Mrs. J. D. Hemphill of Empora and Mrs. E. L. Crow of Ruleville.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson

Otolaryngology—Charles R. Hume

Opthalmology—Edley Jones, Vicksburg

Obstetrics and Gynecology—J. F. Lucas, Greenwood

Orthopedics—Thomas H. Blake, Jackson

Public Health—Felix J. Underwood, Jackson

Pediatrics—Harvey F. Garrison, Jackson

Radiology and Roentgenology—Karl O. Stingily, Meridian

V. A. Pathology—H. N. Naumann, Jackson

Surgery—W. H. Parsons, Vicksburg

Urology—Temple Ainsworth, Jackson

PEDIATRICS

BLOOD TRANSFUSION IN INFANTS, T. K. Rathmell and George Mora, **Journal of the Medical Society of New Jersey**, 48: 424 (September) 1951.

"Some of the venous channels which can be utilized by the trained physician for blood transfusion in infants are the superficial temporal veins (preauricular branch) and the dorsal veins (metacarpal) of the hand. Use of these channels should take precedence, in transfusing infants, over fontanelle, jugular, and bone marrow routes. The dorsal metacarpal veins are usually constant and bilateral, providing the clinician with four chances to complete the infusion successfully.

All physicians should be familiar with venipuncture. It is wrong to canalize a vein by simply plunging in a needle. The needle should be attached to a syringe and the syringe is used to determine when the needle has reached an intraluminal location.

Fundamental technical considerations involve the following:

1. When a 25 guage needle is used, do not interpose a filter in the infusion system.

2. Sterile vaseline, applied to the piston of a 50 ml. syringe, exerts no deleterious effects on the citrated blood and facilitates the injection of the blood under mild but controlled pressure.

3. A short section of tubing intervening between the syringe and intravenous needle allows freedom of movement to some degree on the part of both the patient and the transfusionist.

4. Recommended venous channels for infusion are readily accessible to the operator with the patient prepared by the pediatric restraining sheet.

5. Fundamental principles of antisepsis must be maintained.

6. Compatibility of blood is essential. "Most physicians tend to prescribe blood in excess dosage." The writers follow the general rule that infants will tolerate blood in doses up to 15 ml. per Kg. of body weight. "However, the volume infused should be well below maximum tolerance as calculated and should be established after consideration of the infant's total body weight and stature. If the child is weighed in kilograms, the blood volume maximum is simply calculated: 15 ml. per Kg. Thus, for a 3 Kg. infant, the maximum tolerance would be 3 times 15 or 45 ml. of blood." Physicians who use pounds rather than kilograms for weighing patients will find the following table helpful:

Body Weight in Pounds	Maximum Blood Dosage in Milliliters
2	14
4	28
10	70
15	105
20	140
25	170

"Overdosage depresses rather than stimulates hematopoiesis."

As for how often or how many times a patient should be transfused, in general, if one is not dealing with massive or repeated hemorrhage, one may give blood within the calculated tolerated dose. "If repeated transfusions are contemplated, these should follow either after a 24 hour interval or within the ensuing 72 hours, rather than permitting an interval of 10 to 14 days to elapse before reinfusion. The controlling factor in cases of this type (hypochromic anemias) should be an estimation of the hemoglobin levels of the case under consideration."

COMMENT: "This is a very timely article and should have due consideration by any physician who is going to attempt to give transfusions to infants."

MISSISSIPPI STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

A. L. Gray, M.D., Director

ACUTE COMMUNICABLE DISEASES

Since the last semiannual report, poliomyelitis developed in severe epidemic proportions in the State with Sunflower, Leflore, Bolivar, Washington, and Humphreys counties having the most unusual incidence. By November 26, a total of 674 cases had been reported for the State as a whole since January 1, 1951, of which 293 cases were in the five counties listed above. As of November 26, Sunflower County alone had 139 cases and was the center of an epidemic which started developing early in July and spread peripherally in all directions to include the four adjoining counties. The epidemic started on a few plantations just north of Indianola in Sunflower County and after about two weeks of development on these plantations spread quite rapidly to much of the rest of the county and the other counties in that area. Roughly 60 per cent of the cases were reported as being paralytic in severity and practically all of the cases reported for the State as a whole were hospitalized in the polio centers in Vicksburg.

The previous year of highest incidence in 1950 when a total of 393 cases were reported. The peak of the epidemic in 1951 for the State was reached in August with 196 cases being reported. The fact that the decline since that time has been slow is indicated by 71 cases occurring in the first twenty-six days of November. It is apparent that the total for the year will exceed 700 cases.

Diphtheria showed an unusually low prevalence during the summer and fall months. The total for the year through December had reached only 125 cases, being a record of the lowest incidence of diphtheria for any year in the history of the State. The previous lowest year was in 1948 with 269 cases being reported.

Another disease of very low incidence was typhus fever which reached a total of 17 cases for the year. This is most encouraging in view of the peak year of 1945 with 235 cases reported.

Brucellosis cases for 1951 totaled 67, showing an increase, but this is apparently due to an increased effort to find it.

Some outbreaks of undiagnosed acute febrile illnesses occurred showing familial and community spread apparently involving personal contact.

Epidemiologic Services

It is a routine practice for all evidence coming to the attention of the Division indicating the possibility of cases of typhoid fever, typhus fever, malaria, brucellosis, tularemia, Rocky Mountain spotted fever, smallpox, and other epidemic diseases to make thorough investigations to determine the meaning of such evidence whether this evidence be officially reported cases or positive laboratory findings. During the period nurse consultants from the Division investigated suspected sporadic cases with the results indicated as follows:

	Suspects Investigated	Number Confirmed
Malaria	43	42
Muraine typhus	11	1
Tularemia	9	9
Typhus fever	39	24
Brucellosis	24	23
Schistosomiasis	1	1
Rocky Mt. Spotted fever	4	4
Rabies	1	1
Meningococcus meningitis	10	10
Encephalitis	4	1

It should be pointed out here that of the 42 confirmed cases of malaria only one was apparently acquired locally and the other 41 were soldiers infected in Korea returning home with the infection.

In addition to the above mentioned studies on sporadic cases and suspects, 6 outbreaks of meningitis, food poisoning, streptococcic sore throat, acute gastro-enteritis, and poliomyelitis were studied to determine the extent, cause, and source of the illness. One outbreak of streptococcic sore throat involving 21 cases was traced to pasteurized milk which was probably contaminated after reaching the place of consumption by a food handler who had an acute sore throat.

In addition to these outbreaks, 2 outbreaks of illness in central and northeast Mississippi were studied to some extent. The symptom complex included sudden onset of fever, nausea, vomiting, tenderness over the liver, and possible jaundice. These outbreaks were suspected of being some type of acute hepatitis but nothing could be found as to the cause nor the actual method of spread.

Three nurse trainees were accepted by the Division for periods of from 4 to 8 weeks for field training in epidemiology in cooperation with the Communicable Disease Center of the United States Public Health Service.

They were Mrs. Mary Studley Romer and Miss Albina Bozym of the Communicable Disease Center and Miss Esther Ohman of the California State Department of Health. The nurse consultants participated in teaching 10 classes in venereal disease control to institutional nurse trainees and 6 in-service training conferences in the State for public health nurses.

When the polio epidemic in Sunflower County became of alarming proportions, the Director of the Division requested the National Foundation for Infantile Paralysis to assign a special investigator to help determine whether the illness in question was poliomyelitis, or poliomyelitis associated with some other infection. They promptly assigned Dr. Lisbeth M. Kraft from the Section of Preventive Medicine, Yale University School of Medicine, who came to Mississippi on August 2, 1951, and spent one week in studying the situation particularly with reference to the strain of the virus that might be involved and the relationship of the outbreak to environment and other factors. At that time, there was some question in the minds of the pediatricians in the polio centers as to the uniformity of type and severity of the disease. Many specimens of blood and stool were collected from patients in the early acute and convalescent stages and from family and community contacts for virus identification and immunological study. In addition speciments were collected from swine and fowl which were showing some type of illness in the same area as the polio outbreak. At the time of the preparation of this report a final report from Yale University had not been received.

Tuberculosis Control

The services of the Tuberculosis Control Unit continued to increase in popularity with local health departments and the public in general. Increasing demands from these two sources have kept the three mobile units operating continuously except for several instances in which mechanical difficulties forced the units to discontinue service for periods of from one to four days. These difficulties increased due to the length of service of the equipment to the extent that consideration had to be given to replacing this mobile equipment. Accordingly two new buses were contracted for and purchased locally and the x-ray equipment transferred from the old units to these. Three mobile generators were overhauled including installation of new engines. This will cut down tremendously in breakdowns in the equipment which caused great inconvenience on the part of the local health department staffs and the people anticipating x-rays on schedule.

Dr. Hans-Karl Stauss, part-time Consultant in Chest Diseases, continued his indispensable services by interpreting a total of 107,873 films made by the mobile units and local health departments. Of these 88,766 were 70 mm, 7,024 were 35 mm. and 12,083 were 14"x17" films. Since May through October 31, 1951, this total film service resulted in finding 267 new cases of tuberculosis in addition to many other chest abnormalities and aided in frequent re-evaluation of many previously known cases.

For the same period the mobile units did a total of 88,766 x-rays. This included limited mass surveys in 16 counties with 39,985 chests x-rayed and county-wide mass surveys in 8 counties with 28,257 chest x-rays made. It also included x-raying 6,075 college students at Mississippi Southern, University of Mississippi, and Mississippi State College.

A rapidly developing service through the mobile units consisted of very short frequent visits to each county in the State for the purpose of x-raying cases, contacts, suspects, foodhandlers, teachers, referrals, and antepartum cases. Since May 1 through October 31, these one-hour to one-day clinics have been held in 74 of the 82 counties. Most of these counties have been visited twice for this purpose and this specialized clinic service has reached a total of 14,349 individuals in these highly important groups. It is the general plan for this service to reach each county at roughly four-month intervals. These groups could not be reached so frequently by the use of local stationary units by 14"x17" films because of much greater cost of the film.

Venereal Disease Control

The syphilis control program continued to move rapidly toward the last strongholds of this disease as indicated by the continuing decline of all forms of syphilis discovered and by rapid treatment center admissions. From July through December 6,010 individuals were admitted to the rapid treatment centers for diagnosis, treatment, and re-evaluation. In the same period 496 cases of neurosyphilis were admitted to the centers, about half of which were previously unknown cases and the other half for re-evaluation. It should be pointed out that without discovery and proper treatment of such cases many of them would finally become permanent public charges in mental institutions. In this six-month period, 195 cases of primary and secondary syphilis were discovered in the State which is about one-eighth of the discovery rate in 1946. This is one of the best indications of the marked decline of syphilis.

To discover and supervise the cases of syphilis and gonorrhea each known case is thoroughly interviewed in county health departments and or rapid treatment centers for sex contacts which provides a large number of suspected cases to be investigated. From this and other sources 17,096 suspects were reported and most of these individuals were followed up, examined, and if found infected, they were treated by private physicians, local health departments, or rapid treatment centers. One of the most productive methods of finding suspects is through the mass blood test survey. This was continued as a part of the case finding program in 9 counties in which attempts were made to test the largest possible percentage of the Negro population and selected groups of the white population. These surveys for the last half of 1951 reached 41,038 individuals with blood tests among which were found 2,881 people with positive and doubtful serology. Roughly one-half of these with positive and doubtful serology after examination required treatment.

In late summer and early fall 1,576 Mexican Nationals were imported into the Mississippi Delta to pick cotton. It was felt urgent that these Mexican Nationals be given a blood test and a physical inspection shortly after coming to Mississippi to determine whether they might have transmissible syphilis, thereby being potentially dangerous to the communities to which they had arrived. They were given blood tests and physical inspections on the job. Of the 1,576 tested, 291 or slightly over 18 per cent had positive and doubtful serology and four had lesions which were apparently primary and secondary syphilis. All of those with positive and doubtful serology were given a minimum amount of treatment to insure against their transmitting syphilis to the local population during the three or four months they were to remain in the State.

A special cooperative program was developed in the Keesler Field area between Harrison County Health Department, Keesler Field authorities, United States Public Health Service, and the State Board of Health to at least prevent increase in venereal diseases in both the civilian and military personnel and, if possible, to reduce the existing incidence. Through this cooperative plan the United States Public Health Service assigned two public health advisers and one physician to the area to work in conjunction with the Harrison County Health Department and the State Board of Health. The Public Health advisers are Wilson A. Corcoran and William V. White and the physician is Senior Assistant Surgeon (R) Marc O. Beem. This special program permits extensive interviewing of all cases of suspected venereal disease in Keesler field personnel and follow-up of their sex contacts among the civilian personnel with proper diagnostic and treatment service as required.

The gonorrhea control program was intensified to some extent by more intensive interview of cases and prophylactic treatment of sex contacts. There is some evidence of decline in the prevalence of gonorrhea.

The congenital syphilis study in Washington and Sunflower counties initiated September 1950, was practically completed during this semi-annual period. It reached roughly 3,500 Negro mothers who had babies during the period of study and all of these mothers were tested for syphilis. Infants of those with syphilis were tested at or near four months of age to determine their status. It is already apparent that routine testing of all infants of syphilitic mothers is not sound medical practice and changes in this regard are already underway which will materially reduce the effort going into infant testing by local health departments.

Heart Disease Control

The Heart Disease Control Unit has continued to cooperate with some of the County health departments in evaluating the cardiovascular cases screened by the health department medical personnel, pediatricians, and private general practitioners. A number of prospective surgical cases, that is, patients whose disease could be alleviated or corrected by surgery, were found. Some observations on the incidence and manifestations of rheumatic fever in our State were made.

Two heart seminars were held in Gulfport and Jackson in June with good attendance on the part of physicians. There were three out-of-State speakers as follows: Dr. G. C. Griffith, Professor of Medicine, University of Southern California; Dr. Thorpe Ray, Assistant Professor of Medicine, Tulane University School of Medicine, and Dr. J. R. Snavely, Assistant Professor of Medicine, Tulane University School of Medicine. Two local physicians formally participated. These seminars were under the auspices of the Heart Committee of the State Medical Association with support from the Heart Disease Control Unit. A lecture by a noted cardiologist and teacher from another university was organized for the Central Medical Society.

Informal sessions with the individual physicians and small professional groups were continued for the purpose of post-graduate education in areas where the consultations in the field of cardiovascular disease are not readily available. Scientific papers were presented by the Medical Consultant of the Unit before several medical societies.

Lay education continued to receive a good degree of attention in the form of addresses delivered before interested groups. The coordinator of health services continued to acquaint the biology teachers, school superintendents, and so on with the best approach to the problem of education in the field of cardiovascular disease.

In May, Mrs. Madeline M. Stockdill was employed as Laboratory Technologist in cardiovascular diseases. She is a well-qualified and experienced technician and is available on request for consultation services in regard to proper techniques in the prothrombin-time determination. Some hospitals and clinics have already requested and received this aid. In addition, she is participating in research relating to arteriosclerosis.

A research project in the field of fat metabolism in health and disease was started in June and has continued with splendid cooperation on the part of private physicians and hospital staffs. It is hoped that a worthwhile contribution might be made eventually through this phase of the program directed at a major cardiovascular disease—arteriosclerosis.

Cancer Control

During this period the Cancer Control Unit in cooperation with the American Cancer Society, Mississippi Division, has continued to develop and expand its programs of service and education.

From April 1, 1951 to November 26, 1951, 1,048 patients were referred to the five approved tumor clinics in Mississippi and the West Tennessee Cancer Clinic in Memphis. A total of 2,408 follow-up visits were made by patients to the clinics. The clinics reported 96 terminal cases to the central office during this period.

Interest in the "Loan Closet" has been unusually good. The cancer units in 9 counties have sent in supplies. Other county units are making dressings with the cooperation of local clubs and volunteer groups. These dressings are disseminated through the local health departments with the cooperation of the public health nurses who give instructions on home care of families and patients.

Dressings have been furnished to terminal cases in 55 counties since April. These terminal patients have been visited by the public health nurse and the county cancer unit service chairman. The educational phase of the programs, both lay and professional, continues to grow. The medical seminars in the southern part of the State have been completed with an average attendance of 35 physicians and dentists. In-service training for public health nurses has been conducted in three districts, reaching 75 nurses. At the present time, plans are being completed for a course in cancer nursing through the Extension Department of the University of Mississippi. One hour college credit will be given.

Lay education has been conducted through available community channels. Local health department personnel have played an important part in carrying out this work. During the period approximately 20,000 pieces of educational literature have been mailed for local use. There have been 182 film showings to an estimated 18,809 people.

ANNOUNCING

The Fifteenth Annual Meeting

The New Orleans Graduate Medical Assembly

Conference Headquarters — Municipal Auditorium **MARCH 10-13, 1952**

GUEST SPEAKERS

Leo V. Hand, M.D., Boston, Mass.
Anesthesiology
John H. Lamb, M.D., Oklahoma City, Okla.
Dermatology.
J. Arnold Bargen, M.D., Rochester, Minn.
Gastroenterology
Ralph A. Reis, M.D., Chicago, Ill.
Gynecology
Charles A. Doan, M.D., Columbus, Ohio.
Medicine
John P. Merrill, M.D., Boston, Mass.
Medicine
William Parsons, M.D., Charlottesville, Va.
Medicine
Jacob E. Finesinger, M.D., Baltimore, Md.
Neuropsychiatry
Leroy A. Calkins, M.D., Kansas City, Kan.
Obstetrics
John H. Dunnington, M.D., New York, N. Y.
Ophthalmology
Edward L. Compere, M.D., Chicago, Ill.
Orthopedic Surgery
Hayes Martin, M.D., New York, N. Y.
Otolaryngology
Oscar B. Hunter, Sr., M.D., Washington, D. C,
Pathology
Margaret M. Nicholson, M. D., Washington, D. C.
Pediatrics
Paul C. Swenson, M.D., Philadelphia, Pa.
Radiology
Richard B. Cattell, M.D., Boston, Mass.
Surgery
Claude F. Dixon, M.D., Rochester, Minn.
Surgery
Frank C. Hamm, M.D., Brooklyn, N. Y.
Urology

Lectures, symposia, clinicopathologic conferences, round-table luncheons, surgical and medical procedures in color television, technical exhibits and medical motion pictures. (All-inclusive registration fee—$10.00)

The Postclinical Tour to Merida, Mexico City, Cuernavaca, Taxco, and Acapulco — March 15-29

For information concerning the Assembly meeting and the tour write Secretary, Room 103, 1430 Tulane Avenue, New Orleans 12, La.

New Medical Books

Bramwell—The Approach to Cardiology	$ 3.75
Douglas—Formulary and Therapeutic Guide	3.00
Frimann-Dahl—Roentgen Exam. in Acute Abdominal Disease	10.50
Gindes—New Concepts of Hypnosis	4.00
Gurvitz—The Dynamics of Psychological Testing	6.75
Lahey Clinic—Surgical Practice	15.00
Levy—Disorders of the Heart and Circulation	12.00
Mazer & Israel—Menstrual Disorders and Sterility, 3rd ed.	10.00
McNealy & Glassman—Surgical Care	5.00
Overholt & Langer—The Tech. of Pulmonary Resection, 1st ed., Revised 1951	8.00
Pollack & Krause—Your Diabetes	3.00
Portmann—Diseases of Ear, Nose, and Throat	20.00
Roen—Atlas of Genito-Urinary Surgery	8.00
Schinz—Roentgen Diagnosis, Vol. I, Skelton, Pt. 1	36.00
Seymour —Rice, Dietary Controls and Blood Pressure	2.95
Tait—Textbook of Refraction	8.00
Taub—Clinical Allergy, 2nd ed.	4.50
Whitby—Medical Bacteriology, 5th ed.	3.75
Year Book of General Surgery, 1951	5.00
Year Book of Obstetrics and Gynecology, 1951	5.00

J. A. MAJORS COMPANY

NEW ORLEANS 12 **DALLAS 1** **ATLANTA 3**

Management of the More Difficult Chronic Anemias*

Lawrence E. Young, M.D.†
Associate Professor of Medicine
Rochester, N. Y.

CHRONIC ANEMIA is a common problem in the practice of medicine and one that deserves re-evaluation from time to time in the light of recent developments. It is essential, however, that basic principles of handling anemic patients be clarified before discussing newly acquired information.

When anemia is suspected because of the patient's appearance or because of the results of a screening test such as the hemoglobin estimate, the suspicion should be confirmed or disproved by **adequate** laboratory study. Such study should include hematocrit determination and examination of a blood smear. If anemia is actually present, a specific etiologic diagnosis should then be made by further investigation so that therapy can be directed along specific lines. In treating anemic patients, we should, so to speak, use a rifle, not a shotgun. Adherence to this general policy pays dividends of 2 types:

1. The patient's health is protected by early diagnosis of remediable disorders such as pernicious anemia, cancer of the colon and congenital hemolytic anemia.
2. The patient's financial resources are conserved by prescribing only such therapy as is actually needed. It is not an exaggeration to state that in some cases $5 spent in the laboratory for a specific diagnosis may ultimately save $500 in the drug store.

"Hemoglobinometer" anemia

Before taking up specific categories of anemic conditions, I should like to discuss briefly a common state that might be called "hemoglobinometer anemia." Diagnosis of the pseudoanemia to which I refer is made on the basis of faulty laboratory methods and failure to consider the errors of these methods. Lack of appreciation of the wide range of normal values for hemoglobin in women adds to the confusion.

Usual Features

The usual patient with hemoglobinometer anemia is a female whose chief complaint is that of chronic fatigue. Physical examination in our hypothetical case reveals no abnormalities. By the time our patient is referred for detailed study, she has usually received large doses of iron, liver extract, B_{12} and folic acid in various combinations. Numerous vitamin preparations and minerals such as copper and molybdenum have frequently been given in addition. Review of the record shows that the red blood cell count and hemoglobin have fluctuated during the long period of observation but critical analysis reveals that the fluctuations have been within the range of technical error. Unfortunately some of the rises in red cell count or hemoglobin that were considered significant coincided with the administration of therapy, and it was for this reason that therapy had been continued. For example, rises in red cell count from 3.9 to 4.2 millions have been interpreted as evidence of improvement when in fact this difference is insignificant. Counts as low as 3.9 millions may be encountered occasionally in perfectly normal adult females.

Management

This type of patient deserves critical evaluation from time to time. If anemia is actually present, effort should be renewed to determine the cause. If the patient is not anemic, other causes for the symptoms should be explored, possibly in the psychiatric field, and use of expensive hematinic preparations should obviously be discontinued. In addition to reviewing the history and physical examination periodically, the hematocrit should be determined and the blood smear closely examined. Hematocrit determinations are subject to much less error than hemoglobinometry and should be carried out whenever possible in the study of any anemic patient. The importance of examination of a well prepared blood smear cannot be over-emphasized. I should like to recommend firmly that no patient be treated for anemia until the physician in charge of the case has personally looked at the blood smear. This is a responsibility that should not be delegated any more than the physician would delegate the physical examination of the patient. When we look at the blood smear we are in fact looking at a portion of the patient's body. It is unfortunately necessary that this part of the body be examined under the microscope in the laboratory. With a little experience so much can be learned from a brief review of a blood smear that hematologists have come to regard it as the most important single laboratory procedure for the study of anemic patients. We should have doubt about the accuracy of any hemoglobin determinations that may have indicated an anemic state if the blood smear is normal and the hematocrit is within the normal range. In such a situation the hemoglobin estimate should be repeated when possible by a method different from the one previously used.

---

† From the Department of Medicine, The University of Rochester School of Medicine and Deentistry, and and the Medical Service of the Strong Memorial Hospital, Rochester, New York.

* Presented at the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., February 13, 1952.

Our hypothetical patient usually deserves additional studies including stool examination, urinalysis, chest x-ray and determination of blood urea nitrogen and cholesterol. This sort of minimal study will put us on the right track in most cases.

If the investigations outlined reveal that the hemoglobin and hematocrit are in the lower normal range, a 30-to-60-day trial with oral iron therapy might be undertaken. It is pointless, however, to use expensive shot-gun preparations in this type of case and to continue ineffective therapy beyond 2 to 3 months without subjecting the patient to additional investigation. If medicine of one sort or another must be given for psychological reasons, we shall do well to prescribe inexpensive substances and to do so with our own eyes open.

Use of adjectives "megaloblastic" and "macrocytic"

Before discussing the anemias due to faulty red cell formation, the meaning of the adjectives "megaloblastic" and "macrocytic" should be clarified. The term "megaloblastic" refers to an abnormal type of erythroid proliferation seen in the bone marrow in pernicious anemia and in several other related conditions. The normal erythroid cells in the marrow, on the other hand, are called "normoblastic." The term "megaloblastic" describing abnormal nucleated red cells in the marrow should not be confused with the adjective "macrocytic" which applies to the large, non-nucleated red cells found in the peripheral blood in many anemic patients.

Megaloblastic marrow is nearly always productive of red cells with average size greater than normal; that is, macrocytosis. Macrocytosis, on the other hand, is frequently not associated with megaloblastic marrow. This fact deserves emphasis because many patients are mistakenly treated with liver extract, vitamin B_{12} or folic acid merely because of a laboratory report indicating a macrocytic anemia. Reticulocytes are much larger than mature red cells and when reticulocytosis is encountered in response to hemorrhage or hemolysis, the average size of the circulating red cells may be greater than normal. Fortunately, reticulocytes are not only large but also appear diffusely basophilic on the blood smear; hence, careful examination of the smear should aid in determining the significance of macrocytosis.

Calculation of mean corpuscular volume (MCV) on the basis of red cell count and hematocrit is subject to considerable error unless the red cell count is done with greater than usual care. In interpreting laboratory reports, the error of MCV determinations should be kept in mind and the relationship between reticulocytosis and macrocytosis should be fully appreciated. It is sheer folly to administer liver extract, vitamin B_{12} or folic acid merely because of a laboratory report indicating that the patient has a large MCV.

Conditions associated with impaired red cell formation

With megaloblastic bone marrow

Among the patients who are anemic as a result of impaired erythropoiesis, a wide variety of problems may be encountered. There is no need to deal extensively with **pernicious anemia** in this discussion because the treatment of this condition has been reduced to simple terms and with proper management the hematologic picture can be promptly restored to normal. I should like to emphasize, however, that a firm diagnosis of pernicious anemia should be made in every suspected case before therapy is given because once treatment is started it must be continued at considerable inconvenience and expense for the rest of the patient's life. Demonstration of achlorhydria adds greatly to the security of the diagnosis and should be part of the routine study of patients suspected to have pernicious anemia. Vitamin B_{12} given perenterally provides completely adequate therapy for the vast majority of patients with pernicious anemia and there is no rationale in spending the patient's money on the numerous vitamin and mineral supplements that are so frequently given. Oral preparations now available cannot be recommended for the routine treatment of pernicious anemia. Use of oral preparations containing large amounts of folic acid may in fact aggravate the neurologic manifestations unless the neurons are concurrently protected by adequate amounts of vitamin B_{12}.

In addition to pernicious anemia there are other types of megaloblastic anemia deserving special comment. **Megaloblastic anemia of pregnancy** responds dramatically to administration of folic acid but may not respond appreciably to administration of refined liver extract or vitamin B_{12}. True megaloblastic anemia of pregnancy is uncommon, however, and it is therefore unnecessary to give folic acid routinely as a prophylactic measure in pregnant women. Prophylactic administration of iron alone should be adequate in most cases so far as the prevention of anemia in pregnancy is concerned.

Megaloblastic anemia of infancy also responds dramatically to administration of folic acid, and since vitamin C deficiency is at least partly responsible for the faulty metabolism of folic acid, it is also advisable to administer vitamin C in such cases. After proper treatment, the megaloblastic anemia of infancy seldom recurs and it is therefore unlike the true pernicious anemia of childhood which is extremely rare and which requires continuous administration of vitamin B_{12}.

The chronic, slightly **macrocytic anemia due to prolonged malnutrition** will usually respond best to an adequate diet, especially one containing ample protein. Folic acid should be added to the therapeutic regimen in such cases particularly when the bone marrow is clearly megaloblastic or when the clinical picture is that of sprue.

The so-called **"achrestic" anemia** is by definition a megaloblastic anemia that does not respond to any of the known hematinic substances. At the present time the nature of this condition is far from clear. The only therapy now available to such patients is transfusion of red blood cells sufficient to maintain the hemoglobin within a range permitting moderate activity.

Without characteristic abnormality of marrow

Anemia may be a prominent feature of chronic inflammatory diseases, both infectious and non-infectious, and is a constant finding in patients suffering from chronic renal failure or adrenal cortical insufficiency. In these conditions, the bone marrow may appear unremarkable or there may actually be some degree of normoblastic hyperplasia; that is, an increase in the number of normal red cell precursors. Recognition and treatment of the underlying disease is all important in dealing with this group. Red blood cell transfusions are frequently advisable. It is useless to try to force the bone marrow to produce more red corpuscles by administration of iron, liver extract and shot-gun vitamin preparations to such patients since there is usually no deficiency of these substances.

With hypoplastic bone marrow

Hypoplastic or fibrotic marrow is best demonstrated in marrow specimens obtained by trephine. Such conditions should be suspected when there is unexplained marrow failure and little or no material can be aspirated from the marrow cavity by needle. Chemical toxins such as benzol can sometimes be incriminated as causes of hypoplastic anemia but frequently no cause is apparent. Leucopenia and/or thrombocytopenia may be present in addition to anemia, or there may be failure of erythroid development alone. Congenital hypoplastic anemia usually involves only the erythroid cells and is a disorder that has aroused much speculation.

Administration of ACTH and cortisone has been followed by improvement in some cases of hypoplastic anemia, but more often there has been no response. Transfusions of red blood cells are essential for maintenance of life in most cases and should be given often enough to keep the patient comfortable. Weight reduction in the obese patient with hypoplastic anemia is desirable because of the need for reducing the blood volume and thereby the requirement for transfused red cells. Iron liberated from the transfused red cells as they are broken down in the body is carefully retained. Excessive iron storage after multiple transfusions in such patients is a hazard since it may lead in some cases to impairment of function of tissues such as liver, pancreas and myocardium. There is certainly no need for administration of iron salts to these patients and there is also no indication for prescribing other presently known hematinic substances.

Myxedema is usually accompanied by

moderate anemia and replacement of much of the active bone marrow with fat. This disorder may be easily overlooked by the physician who sees the patient so frequently that he scarcely perceives the gradual development of the hypothyroid state accompanying the anemia. Response of the anemia administration of thyroid extract is slow but certain and ultimately gratifying. The usual hematinic mixtures, given because of failure to recognize hypothyroidism, are much less effective and much more expensive.

With neoplastic marrow

Malignant processes such as leukemia, lymphoma and metastatic carcinoma involving the bone marrow do not often interfere with erythropoiesis by mechanical displacement of the erythroid elements. There may actually be erythroid hyperplasia in association with these conditions, and in some cases accelerated destruction of the patient's red cells may be a more important mechanism of anemia production than failure of erythropoiesis. Red cell transfusions are frequently necessary to sustain life or comfort but the donated red cells, like the patient's own red corpuscles, may be eliminated with abnormal rapidity for reasons that are not understood. The usual hematinic preparations are of little or no value in treatment of malignant conditions of the bone marrow unless there are complications such as blood loss or coexistence of pernicious anemia.

Chronic Blood Loss from Obscure Sources

Most sources of chronic blood loss are readily discovered by the patient himself, his family physician or the roentgenologist. There remain, however, certain obscure lesions, mostly within the digestive tract, that may cause bleeding over long periods of time. Carcinoma in the caecum or sigmoid region of the colon may be overlooked on x-ray examination more frequently than is generally appreciated. The rare tumors of the small intestine are even more likely to escape notice unless particular attention is paid to barium study of the small bowel. Elderly patients are often unable to cooperate satisfactorily during investigations with barium and this adds to the difficulties of the roentgenologist.

When the red blood cells appear hypochromic on the blood smear, thus suggesting iron deficiency, and when the stools are guaiac positive, no effort should be spared in locating the source of the bleeding. Success is most often achieved when the physician stands by his conviction that blood is being lost from the digestive tract and that the site of bleeding must be found. Exploratory laparotomy may sometimes be necessary.

Diagnosis of bleeding esophageal varices is usually a relatively simple matter especially when the patient has hematemesis and evidence of hepatic cirrhosis. Difficulty arises in the patient who bleeds slowly from varices and whose liver function is adequate despite the presence of portal hypertension.

In the patient with intermittent gastrointestinal bleeding associated with abdominal pain, arthralgia and macular or purpuric skin lesions, the Henoch-Schonlein syndrome should be considered. These symptoms may be manifestations of hypersensitivity, but to date there is no well established form of therapy for this condition. Some patients with this syndrome bleed acutely and may require transfusions. Others may develop iron deficiency anemia from repeated small hemorrhages that pass unnoticed or untreated, and in such instances iron therapy is clearly indicated.

Hereditary hemorrhagic telangiectasia is an uncommon vascular disease transmitted as a Mendelian dominant. Bleeding from telangiectases in the nose or in any region of the digestive tract may be disabling unless transfusions or iron therapy or both are administered. Failure to suspect this condition is usually due to the inconspicuous location of the bleeding telangiectases and to covering of visible lesions by cosmetics in women.

Replacement of iron stores after chronic blood loss can usually be effected by ingestion of inexpensive iron salts, such as ferrous sulfate. In most cases there is no advantage in giving various mineral and vitamin supplements which are so highly advertised but for which there is so little need. Iron deficiency remains one of the most common dietary deficiencies throughout the world despite the fact that this element is so cheap and readily available. People in the lower economic strata are spending many dollars on unnecessary vitamins when they should be exchanging a few of their copper pennies for the simplest varieties of iron tablets.

Saccharated oxide of iron may be given intravenously to the occasional patient who cannot tolerate or absorb iron given orally. Indiscriminate use of this preparation may, however, lead to excessive storage of iron in tissue with resultant fibrosis and impairment of tissue function. Intravenous administration of iron is seldom necessary and should be undertaken only after careful estimation of the patient's requirement.

Chronic Hemolytic Anemias

The anemias due to accelerated destruction of red cells have received much more attention in recent years than previously and we have come to appreciate the fact that this group, taken collectively, is a large one. The life span of red cells may be shortened either because of intracorpuscular abnormalities or because of the action of extrinsic forces on the red cells. Most of the cellular defects are inherited while most of the extracorpuscular factors are thought to be unrelated to the effects of genes.

Intracorpuscular defects

Congenital hemolytic anemia, which is more properly called hereditary spherocytosis, is inherited as a Mendelian dominant, is most common among persons of northern European descent and is characterized by the presence of abnormally thick red cells called spherocytes. The thick red corpuscles are readily trapped in the spleen in which site they either undergo lysis or are rendered more susceptible to destruction in the circulation. Splenectomy promptly and permanently relieves both anemia and icterus despite the fact that abnormality of the red cells persists. One is justified in expending considerable effort in establishing a diagnosis of this condition because surgical treatment is so highly effective, once the diagnosis has been made.

The typical patient with this disorder has splenomegaly, slight jaundice, pigment stones in the gall bladder, and varying degrees of anemia; leg ulcers and skeletal abnormalities are rare. The red cells usually have increased susceptibility to lysis in hypotonic solutions of sodium chloride but in some cases this abnormality is not evident until after the cells have been incubated at body temperature under sterile conditions for 24 hours. Spherocytosis is usually detectable on the blood smear but may be difficult to evaluate in some cases. Although similar abnormalities should be demonstrable in one of the patient's parents, puzzling exceptions may be encountered occasionally.

Sickle cell anemia is another example of hemolytic disorder due to an inherited abnormality of the erythrocyte. Sickling tests should be performed on the blood of every anemic Negro, especially if skeletal abnormalities are evident or if the anemia is accompanied by mild icterus and reticulocytosis. Although splenectomy is seldom indicated in this condition, red cell transfusions may be decidedly worthwhile in selected cases since the normal donated cells are destroyed in a normal manner.

The severe form of Mediterranean anemia, called Thalassemia major, is seen chiefly among persons of Italian extraction and can be cited as still another example of inherited abnormality of the red cell associated with shortened life span of the cells. Patients suffering from the severe form of Thalassemia are homozygotes, having inherited the abnormality from both parents. The heterozygote with inheritance of the defect from only one parent has a mild disorder, called Thalassemia minor. In this condition the red cell count is normal or usually higher than normal while the hemoglobin and hematocrit are somewhat below normal because the cells are thin and poorly filled with hemoglobin. There is at most only a low-grade hemolytic component in Thalassemia minor. This disorder is re-markably prevalent in some communities, such as Rochester, N. Y., where it is estimated that 4 per cent of the Italian population of the city is affected. The appearance of the red cells in blood smears from these individuals is much like that seen in iron deficiency anemia. The red cells look thin and pale, and target and oval forms are numerous. We find that many of these people have been receiving iron therapy or the usual shot-gun hematinics for years, with benefit to the drug business but not to themselves. All that is needed is a firm diagnosis based on family study, followed by reassurance regarding the benign nature of this condition. We have come to have strong feeling about management of this disorder because it is the most common hematologic problem encountered in the city of Rochester.

Nocturnal hemoglobinuria and other hemolytic disorders associated with abnormalities of the red cell are too rare to justify separate comment.

Extracorpuscular factors

Some of the chemical, physical and infectious agents capable of destroying red cells are well known and need not concern us in this discussion. During the past decade there has been increasing interest in the role of antibodies reacting with the patient's own cells as well as normal donated red cells. In the so-called "autoimmune" type of acquired hemolytic anemia, autoantibodies can be demonstrated on the red cells and in the serum by use of newly developed techniques. The antiglobulin tests (Coombs, Mourant and Race) is most frequently used to detect erythrocyte-bound antibody, while antibody in the serum can be demonstrated readily by agglutination of trypsinized normal red cells.

Patients having the chronic autoimmune disorder frequently suffer from hemolytic anemia at irregular intervals and during the periods of acute illness the red cells may exhibit abnormalities of shape and fragility similar to those encountered in hereditary sperocytosis. Between episodes of hemolysis, the hematologic picture may be normal except for persistence of the autoantibody in many instances.

Results following splenectomy and administration of ACTH or cortisone are variable and difficult to predict. Hormone therapy followed by splenectomy nevertheless appears to be justified in the more severe cases. Transfusion of these patients may be necessary but hazardous because of technical difficulties in crossmatching and the likelihood of sensitizing the patient to various red cell antigens. Since production of autoantibody may be stimulated by transfusion of normal red cells, it seems desirable in some cases to withhold transfusions if possible with the hope that the hemolytic process will subside before the anemia reaches a critical point.

Existence of a hemolytic disorder should be suspected whenever anemia is associated with mild icterus and reticulocytosis. Spherocytosis, increased red cell fragility, hemoglobinemia, hemoglobinuria, splenomegaly and skeletal abnormalities should be sought but will often be lacking. Specific diagnosis of a hemolytic state will usually require special laboratory procedures.

With regard to management of the suspected hemolytic anemia, I should like to repeat the same recommendation that has been made in discussing the other chronic anemic conditions. Diagnosis should be as precise as possible and therapy should then be directed along specific lines. Indiscriminate and prolonged use of expensive shot-gun hematinics must be vigorously condemned. Physicians should cease prescribing such preparations except for psychological purposes, and should in fact advise patients against their use. The drug manufacturers might then have to cease marketing such senseless concoctions and the patients' dollars could be spent on items that would contribute more to their health and happiness.

ANNOUNCEMENT

The Earle Johnson Sanitorium, Meridian, Mississippi, (formally Hoye's Sanitorium) announces the change of name and additional facilities.

Hoye's Sanitorium was purchased and has been operated during 1951 by C. Earle Johnson, Jr., M.D., F.A.P.A., F.A.C.P., Comdr. (M.C.) U.S.N.R., Ret., a diplomate of the American Board of Psychiatry and Neurology with certification in Psychiatry, and an associate of the World Federation for Mental Health. The name has been changed as indicated above.

The Sanatorium treats nervous and mental, neurological, alcoholic and addicted patients. Treatment methods include psycho-therapy, electrocoma, diencephalic stimulation, deep and sub-insulin shock, distributive analysis and recreational therapy. A physiotherapy department has recently been commissioned.

Acute alcoholic intoxication is treated with a gradual liquor reduction schedule and appropriate sedation with the object of avoiding hallucinosis and delirium. Antabuse and ACE therapies are then available for those who elect to take them. Narcotic addictions are also treated with gradual reduction schedules and the indicated supportive treatment.

Senile cases are actively treated and, contrary to general opinion, usually respond well. Some cases are accepted for custodial care only. Psychopaths and mental deficients are accepted for rehabilitation and training.

A private out-patient clinic is operated at the Sanatorium.

There is a visiting consultant staff representing the major specialties and dentistry. A chaplain is in attendance to administer to the spiritual needs of the patients, a full staff of registered nurses, therapy aides, attendants, and other helpers is in attendance.

To arrange for admissions, telephone Dr. Johnson at Meridian 3-3369 during the day or 2-3552 at night or write in care of P.O. Drawer 106, Meridian, Miss.

The Problem Labor Patient*

Otus Theron West, A.B., M.D., F.A.C.S.†
Fairfield, Alabama

The improved knowledge of electrolyte balance and more liberal and earlier employment of blood transfusions have reduced the maternal and fetal mortality from shock and hemorrhage. The antibiotics and chemotherapeutic agents have minimized the loss from infection. The maternal and fetal loss from severe toxemia has been greatly reduced by more expectant mothers seeking earlier prenatal care and the attending physicians giving better prenatal care.[1] The dynamics of pregnancy and labor remain for the most part a mystery. Therefore, the patient in whom pregnancy and labor do not progress satisfactorily is becoming the most important problem in present day obstetrics..

This discussion will be limited to the more frequent problems encountered in everyday practice of obstetrics and our present views of their management.

LABOR OR NOT

Many patients present themselves during the last weeks of pregnancy with episodes of cramps which they believe to represent labor. The attending physician is unable to be certain, especially in the multiparous patient, by a single examination whether or not the patient is actually in labor. Therefore, these patients should be put to bed and the attending physician observe personally the course of events. He can not rely upon the story of the patient, the family, friends and in most instances the evaluation of a nurse. The physician must closely observe the character, the frequency and the effect of the contractions upon the cervix. The only certain evidence of labor is progressive effacement and dilatation of the cervix.

Many of these patients become comfortable after being put to bed for a few hours and are discharged the following day. Patients are some times admitted as many as three times before they finally have real labor. It seems unwise to do anything to attempt to force patients into labor unless there is some specific indication other than cramps. The date of conception is rarely known and there is individual variation in the length of time a pregnancy is carried in utero so the attending physician can almost never be positive when a pregnancy is at term. In more than 15,000 deliveries managed in this manner for the past ten years we have not encountered a postmature baby. Therefore, we believe a baby is rarely carried in the uterus past maturity and do not advise medical or surgical inductions of labor without specific indications for termination of pregnancy.

RUPTURE OF MEMBRANES

Spontaneous rupture of membranes may occur in patients at any time. When this accident occurs before the onset of labor the patient should be examined by the attending physician. This should include inspection of the vulva to be sure that the leakage is amniotic fluid and not urine. Sudden and involuntary emptying of the bladder may be confused by the patient as rupture of amniotic sac. A rectal or sterile glove vaginal examination must be done to rule out prolapse of the cord. Careful abdominal examination is made to rule out abnormal presentation, fetal anomalies, polyhydramnios or multiple pregnancy. An x-ray may be necessary if the patient is obese and findings by palpation are inconclusive. Following a careful and complete examination, if the pregnancy is at or near term, the patient should be put to bed, given prophylactic penicillin to avoid or minimize intrauterine infection, and fetal heart tones checked at frequent intervals. If the baby is premature and viability is questionable, large doses of stilbestrol or progesterone may be given in an attempt to prevent the onset of labor for a period of a few days or weeks. Such a patient must be cautioned not to take a tub bath, or a douche and to refrain from marital relations. The fetal heart tones should be checked periodically for evidence of fetal distress and the patient reassured, as occasionally a patient will go several days before the onset of labor. Here again in the absence of definite fetal or maternal indications no measures should be instituted to hasten labor.

---

† From Department of Obstetrics and Gynecology of Lloyd Noland Hospital.

* Read before the Northeast Mississippi Medical Society meeting, Tupelo, December 11, 1951.

PREMATURE LABOR

The mechanism of labor at any time remains a mystery but its onset earlier than the 38th week of gestation creates a problem which is too frequently mishandled. Such a patient is frequently given a large dose of a narcotic. As a result of this the labor is slowed but not stopped. The premature baby is heavily narcotized and has a poorer chance of surviving when it is finally born. In the light of our present knowledge hypoxia is frequently the lethal factor in the premature infant. Therefore, the use of narcotics should be abandoned in the mother with premature labor. Such patients and their families should have the fetal risks of heavy sedation explained to them and labor endured with a minimum of sedation. Scopolamine may be given in 1/150 grain doses as often as every three or four hours, as it has almost no depressant effect upon the fetus. The barbiturates should not be given in doses larger than one and one-half grains and repeated only at four-hour intervals. Spontaneous delivery with episiotomy under local anesthesia offers the premature infant the best outlook. Saddle block or caudal may be used by the expert but here the danger is in carrying the anesthetic level too high and getting an abnormal drop in maternal blood pressure which produces hypoxia in the infant. It is this hypoxia whether from excessive premedication of the mother, prolonged general anesthetic of mother before delivery of baby, trauma of the baby by forceps, version, breaking up breech for delivery or prolonged obstructed labor that decreases the chance of the survival of the premature infant.

PROLONGED LABOR

From time immemorial the danger of long labor has been appreciated by all who tended women in childbirth. Hugh Chamberlain[2] (1683) described "going with child is as a rough sea, on which a big bellied woman and her infant floats the space of nine months. And Labour which is the only Port, is so full of dangerous Rocks."

Those patients in whom labor is not progressive and do not deliver in from twelve to twenty-four hours demand careful evaluation. The attending physician must first be certain the patient is actually having labor. As mentioned earlier the physician must determine this by careful examination of the patient himself.

When should a labor be considered prolonged? Various clinics and authorities have set different standards. At this institution multiparous patients in labor for eighteen hours, and primiparous patients in labor for twenty-four hours, and delivery not imminent, are classified as prolonged labor. At this point the patient is carefully re-examined to rule out the following causes for prolonged labor: uterine inertia, multiple pregnancy, polyhydramnios, fetal anomalies, malpresentation, cephalopelvic disproportion, cervical dystocia, pelvic tumors and premature and injudicious administration of analgesic drugs.[3] X-rays of the pelvis both A-P and lateral views are made for demonstration of the bony pelvic architecture and the fetal pelvic relationship. These x-rays should be seen and interpreted by the attending physician and not just rely upon the interpretation of the radiologist alone. A sterile vaginal examination (patient scrubbed, draped and operator scrubbed and sterile gloves worn) without anesthesia should be carried out by the attending physician to re-evaluate the cervix, the presenting part and the pelvic capacity. Next to the fetal head there is no better pelvimeter than the hand of the obstetrician. Consultation may be sought and a decision made regarding the conduct of the labor from this point.

Those patients in which a further test of labor seems indicated should be reassured as well as their family. By taking the patient and her family into his confidence the physician lightens the load for himself and all withstand the prolonged labor better. The aim of a further test of labor is to determine what the woman can accomplish and not what she can endure. The patient must be further supported[4] with adequate fluids, timely sedation and prophylactic penicillin instituted. As long as any progress is made, regardless of how slow, this course should be pursued until the cervix is completely dilated and the presenting part is on the perineum. The fetal heart tones must be listened to frequently and the method abandoned only with evidence of fetal distress. This may require as long as three days but the attending physician is rewarded by a simple delivery with an unscarred mother and baby.

For most physicians it seems safer to make a pelvic application of the forceps with the head on the perineum and deliver as a persistent posterior or anterior with the aid of a generous episiotomy. Manual rotation after a prolonged labor with much molding of the head is rarely successful and forceps rotation under such circumstances carries the hazard of extensive tears for the mother. It is our practice here to apply the forceps and make a trial traction with a uterine contraction before the patient is put to sleep with an anesthetic. If no advance is made with the trial traction delivery from below is abandoned. The mother and baby thus have not been subjected to an anesthetic, and arrangements for Cesarean section can be carried out orderly without jeopardy to mother or baby. We believe under such circumstances Cesarean section should be done rather than subjecting the mother and baby to the hazards of forceps rotation or version and extraction.

Uncomplicated uterine inertia may be treated with small doses of pitocin.[5] The attending physician must be certain there is no malpresentation or disproportion. Disproportion must be just as carefully evaluated in the multipara as in the primipara. The fact that a patient has had one average size baby through her pelvis does not assure a safe delivery of a subsequent baby. It is common knowledge that succeeding babies tend to be larger and some of the most serious problems of disproportions occur in the grand multipara. The uterus must be hypo- or normotonic between contractions before administering pitocin. A hypertonic, irritable uterus is a contraindication to the use of pitocin. The fetal heart tones and uterine behavior must be closely checked so that the attending physician must be with the patient receiving pitocin. Pitocin may be administered in one or two minim doses, hypodermically, but at the present time the intravenous administration[3] is preferred by most physicians using the drug. One cubic centimeter is mixed with 1,000 cc. 5% glucose in distilled water and started intravenously. The rate of flow is regulated according to the response. If these safeguards are carefully observed pitocin is a valuable drug to the obstetrician and the patient with inertia.

Rupture of the membranes in the patient already in prolonged labor seldom improves the quality of the labor. There is one exception to this and this is the over distended uterus as the result of multiple pregnancy or polyhydramnios. In such cases rupture of the membranes usually results in a much more satisfactory and effective type of contractions. Preserving the membranes in the prolonged labor patient at least until the cervix is completely dilated seems to minimize the trauma to the baby and minimize the hazards of intrauterine infection for both mother and infant. The insertion of bags, intra- or extraovularly, the use of the prophylactic version and Duhrssen's incision have been abandoned at this institution in the management of prolonged labor because of the fetal mortality and maternal morbidity and scarring associated with their use.

CESAREAN SECTION

With the improvement of preoperative preparation, anesthesia, the antibiotics and chemotherapeutic agents, and postoperative care, the primary mortality of Cesarean section is extremely low. All of these advances have likewise lowered the mortality of vaginal delivery. The Cesarean section[1] still carries an increased mortality and morbidity over vaginal delivery and in addition it leaves the individual an obstetrical cripple with a limitation upon the size of her family. In addition she is subjected to the hazards of postoperative adhesions, hernia, etc. Therefore, there seems no justification for the high rates of 7 - 8 per cent deliveries by Cesarean section as reported by a few institutions.[6]

Because of better supportive measures which have already been mentioned a longer trial or test of labor can be given a patient and a Cesarean section done with reasonable safety to the patient. As to the safety factor, no longer is it necessary that a section be performed upon a patient within the first twelve hours of labor. A Cesarean section may be performed as late as twenty-four hours of labor if the patient has been properly supported and vaginal and rectal examinations have been limited to a reasonable number during the course of labor.[2]

Because there is no way to assess the strength of any uterine scar the dictum "once a Cesarean section always a Cesarean section" holds at this institution if a pregnancy is carried to term. A word of caution is mentioned as to time for the repeat section. For some still unexplained reason the prognosis for the premature baby is worse if delivered by Cesarean section than if delivered through the vagina. Therefore, we try to carry the repeat sections to within one week of the expected date of confinement before repeating the section. If there is any question as to exactly when the pregnancy is at term the patient is allowed to go as long as possible and instructed to report to the hospital promptly at the first sign of onset of labor and an emergency Cesarean section done. Needless to say, it is a great disappointment to the patient and obstetrician to do an elective Cesarean section and lose the baby because of prematurity.

BREECH PRESENTATION

About five per cent of deliveries are breech and thus the physician meets this problem very seldom. The panic of the attending physician when he meets a breech presentation has caused much grief and poorer results than the presentation itself.[7] Breech presentation is more frequent in premature infants and multiple pregnancies[8]. There is need for calmness and gentleness in management of these babies. The patient should be supported and labor allowed to progress spontaneously until the breech bulges the perineum as the vortex is allowed to do[4]. Then an episiotomy can be done and the extraction accomplished without difficulty. Gentleness and rigid avoidance of haste or trauma are the watchwords in the extraction. If the head does not slip out easily, forceps (preferably Piper) should be applied to lift the head out rather than subject the baby to excessive trauma of pull.

HEMORRHAGE

The cause and source of any bleeding in the last trimester of pregnancy must be sought. This means that these patients should be hospitalized promptly for a careful check of blood pressure, blood count, blood cross matched and a sterile vaginal examination carried out. The first hemorrhage from any cause in the last trimester is almost never fatal so that the attending physician has a warning. This warning should be heeded and cause of bleeding established without delay.

The management and conduct of the case will depend upon the findings in each case.

Those cases of placenta previa should be managed according to the degree of previa. The ones in which the entire cervical os is covered by placenta should almost universally be delivered by Cesarean section. The ones with incomplete placenta previa should be managed according to the state of the cervix and due consideration for the baby. Most of these can be handled conservatively with rupture of the membranes and vaginal delivery. Recent literature contains reports of conservative management of this complication with the recommendation of carrying the pregnancy a few weeks further to insure a living baby[9,10]. The patient and family should thoroughly understand the hazards of this procedure should it be decided upon and blood kept constantly cross matched and ready to administer to the patient should further hemorrhage occur.

Premature separation of the normally implanted placenta (abruptio placenta) can in most instances be treated conservatively with good results for the mother. There is an occasional patient in whom a Cesarean section may be the method of choice in the interest of obtaining a living baby. The trouble with this is that all mild cases do not progress to severe cases, so when you get a living baby by Cesarean section you can never be sure but that vaginal delivery might also have given a living baby. Those cases in which the baby is dead when the patient is first seen should be treated conservatively with replacement of blood loss and prophylactic antibiotics and wait for cervical effacement and dilatation. This may require forty-eight to seventy-two hours if the pregnancy is several weeks from term and the cervix is unprepared for labor.

Postpartum hemorrhage is best treated by avoiding its occurrence. The following types of cases predispose to postpartum hemorrhage: 1) prolonged labor, 2) short, rapid labor, 3) toxemia of pregnancy, 4) hypertension, 5) uterine fibroids, 6) grand multipara, 7) multiple pregnancy, 8) polyhydramnios, 9) anemia, 10) prolonged anesthesia, 11) traumatic delivery, and 12) infection.

In all of these cases an ampule of oxytocic (ergotrate or methergene) is given intravenously with the delivery of the anterior shoulder of the baby and the behavior of the uterus is very closely observed by palpating it frequently, not only immediately after completion of the delivery but for an hour or more following the delivery until the patient has reacted and stabilized. Excessive blood loss is replaced as promptly as possible. The uterus is palpated and the cervix is inspected in all cases in which there has been intrauterine manipulation and tears of the cervix repaired. Packs are not used as the trauma associated with their insertion and morbidity seem to outweigh any good that might be expected from their use[3].

INDUCTION OF LABOR

Elective induction of labor in most hands is a hazardous procedure as was mentioned earlier in this discussion. There are certain complications which require induction of labor. If the patient is thought to be at term a dose of castor oil and an enema may start labor. If the patient is a multipara, at or near term with a vertex presentation, simple rupture of the membranes may start labor. An intravenous drip of dilute pitocin 1 cc. in 1,000 cc. 5 per cent glucose in distilled water may be given if the cervix is favorable and the other prerequisites for the use of pitocin are met. This may be repeated after twelve hours if necessary and then repeated the following day with rupture of the membranes. This almost assures labor. For some unexplained reason a labor that is started by pitocin is very apt to stop if the pitocin is stopped so the physician should remain with the patient and continue the pitocin throughout the labor. Any remaining solution should be continued after the third stage of labor.

For the patient that is several weeks from term and labor must be induced, it is our practice to insert a No. 22 rubber catheter into the uterus, extraovularly if possible, and hold this catheter in the uterus by a five yard narrow gauze pack with about half of the pack inserted into the uterus and the remainder packed against the cervix high in the vagina. The patient is started on prophylactic penicillin and the catheter and pack left in place until the patient is well along with active labor. This procedure is easily accomplished by inserting a Sims speculum into the vagina and grasping the anterior cervix with a double tooth tenaculum and using a uterine dressing forcep to guide the catheter and pack into place. No anesthetic is required to do this.

CONSULTATION

The attending physician should welcome and encourage consultation in these problem labor patients. This is added protection for the patient, her baby and the attending physician. Such consultation should usually be extended as a professional courtesy to the attending physician and not another economic burden to the patient. If and when this practice becomes common practice mothers and babies will benefit as well as the physician.

The attending physician has not fulfilled his entire responsibility to a problem labor patient and her family until he has explained in lay terms what she has experienced. This will enable her to give an intelligent history to the next physician she may choose to see during a subsequent pregnancy. We should inspire confidence in all our relations with patients and make every patient with whom we come in contact a friend of the profession.

SUMMARY

1. The problem labor patient is one of the most important problems in present day obstetrics.

2. The attending physician must know the character of uterine behavior of each labor patient in order to properly evaluate the situation when labor is not progressive.

3. Conservatism offers the mother and baby the best prognosis in premature labor, premature rupture of membranes and prolonged labor.

4. The indications and contraindications for use of pitocin in uterine inertia have been emphasized.

5. Cesarean section rate should remain low in modern obstetrics.

6. Calmness and avoidance of haste in breech deliveries offers the best prognosis for the baby.

7. Bleeding in the last trimester of pregnancy demands action.

8. The methods for induction of labor upon indication are outlined.

9. Consultation as a professional courtesy will save mothers and babies and promote better public relations for the profession.

BIBLIOGRAPHY

1. Hunt, A.B.: J. A. M. A. 147:999, 1951.
2. Nixon, W.C.: Am. J. Obst. & Gynec. 62:964, 1951.
3. Eastman, N.J.: Williams Obstetrics. New York, 1950, Appleton - Century - Wolf, Inc.
4. Dorman, D.B.: J. A. M. A. 147:1404, 1951.
5. LaBafe, J.S. and Barbaro, A.J.: Am. J. Obst. & Gynec. 62:1292, 1951.
6. D'Esopo, D.A.: Am. J. Obst. & Gynec. 58:1120, 1949.
7. Moloy, Howard L.: Evaluation of The Pelvis In Obstetrics, Philadelphia, 1951.
8. Micodemus, R.E., Manson, W.W.: Am. J. Obst. & Gynec. 61Ai 38, 1951.
9. Gordon, C.A., Rosenthal, A.H.: Surg. Gynec. & Obst. 88:259, 1949.
10. Johnson, H.W.: Am J. Obst. & Gynec. 59:1236, 1950.

Acute Poliomyelitis*

Jerome A. Weaver, M.D.
Birmingham, Ala.

I wish to run briefly through an academic outline of etiology, epidemiology and symptomatology of acute poliomyelitis, then spend some time on a discussion of treatment, and also to discuss some of the newer concepts regarding the relationship of the onset of poliomyelitis to the antigen-antibody response of the individual.

By definition, poliomyelitis is "an acute communicable virus disease characterized in the majority of instances by few clinical manifestations other than slight symptoms referable to upper respiratory or gastro-intestinal infection, but in the more typical and severe cases by partial or complete flaccid paralysis of the skeletal muscles with few accompanying sensory changes." This definition is approximately the wordage of Dr. Joseph Stokes, University of Pennsylvania, one of our country's prominent virologists.

One of the research works at the National Institute of Health predicted from electron microscope studies of the poliomyelitis virus that more than one paralytic strain existed, and subsequent work has indicated that at least three, and probably more, poliomyelitis viral strains have the ability to cause paralysis. This is in contrast to the Coxsakie virus, recently studied and publicized, which is apparently responsible for an abortive or non-paralytic clinical disease process. That should be enough etiology discussion to show the variability of thinking regarding this rather fascinating disease which dates to antiquity, but which was first adequately described in 1840 by Heine, a German orthopedist.

Geographic spot maps of epidemic poliomyelitis throughout the world conform to no reasonable pattern of behavior. There is an increased tendency to cases in the Temperate Zone, the epidemics usually occur in the summer and autumn, with July, August and September being the peak months, and there is a sharp drop in new cases following the onset of cooler weather. Insect, bird, and mammal vectors have been studies without any valid conclusion being advanced, cross infection by respiratory route (drinking cup) has been conclusively proved, and recovery of the virus in stool and sewage is, of course, well known. At present, it cannot be stated in what percentage of cases the virus enters the body through the upper respiratory tract, or in what percentage the invasion occurs through the intestinal wall. Nor has the skin been eliminated as a possible portal of entry.

An unexplained phenomenon is the higher incidence of rural over urban cases. The findings of neutralizing antibodies in sera of practically all adults, in all climates, has suggested that the disease occurs in subclinical form from time to time throughout the world.

The factor of susceptibility is, of course, being studied. The incidence of the paralytic form of the disease has been repeatedly demonstrated to be higher in several generations of individual families. Recently authenticated cases of reinfection, of second attacks, have been published and we seem to be seeing an increased case-load with improving sanitation giving us pause for speculation regarding the development of immunity. Too, it has been stated that paralytic poliomyelitis is practically non-existent in thumb-suckers!

One last statement on epidemiology: A transplacental immunity appears to protect most infants during the first four to six months of life, unless the mother is susceptible, and immune antibodies in breast milk have been demonstrated in animal experiments (suckling mice). I've had several mothers of newborn babies tell me they wished to nurse their babies "to protect them from polio." Again, food for thought!

The simplest and most useful classification lists only 1) abortive, or non-paralytic poliomyelitis, and 2) paralytic poliomyelitis. "Meningitic", "sub-clinical", "encephalitic", or "polioencephalitic", I feel, are best used as descriptive terms.

Sudden onset, headache, fever, stiff neck and back are THE recognizable signs and symptoms suggestive of poliomyelitis in epidemic season. A lumbar puncture is indicated in the febrile stage in epidemic season, but may be deferred in non-epidemic periods — this implying practical management of cases with close observation. However, some treatment centers delay the diagnostic tap in deference to the patient's comfort.

---

* Address given before Lowndes County Medical Society, Columbus, Miss., August 28, 1951.

Spinal fluid findings may be normal or may show the characteristic increased spinal fluid pressure, the increased lymphocyte count (usually less than 100/cu. mm.), and a slight increase in spinal fluid protein. Polymorphonuclears may predominate when the tap is done early.

The reflexes may be normal, slightly decreased or hyperactive, and, of course, absent in the paralytic cases. We'll dismiss the abortive form at this point with the statement that there is no progression to paralysis.

In the paralytic form there is usually an added severity of symptoms, giving forewarning of subsequent paralysis. Extreme stiffness of neck and spine lead to the so-called "spine sign" or tripod position as the child splints his back against painful motion. Meningitic signs, including the Kernig and Brudzinski, and tightness of leg hamstrings on straight leg lifting may be present. Associated with temperature of 103 degrees and headache, should not this patient have the benefit of the diagnostical spinal tap that rules out meningococcal or other forms of meningitis? Hyperesthesia areas of extremities and fibrillary muscle twitching may precede paralysis of muscle groups. Retention often occurs, constipation is more common than diarrhea, and paralytic ileus may appear at times. Progression to the weak muscle followed by actual paralysis, absent reflex, and tenderness of the muscle group on deep pressure is variable in time, but usually occurs in a few hours, and I am sure most of us have seen an ambulatory patient in the morning, only to find a flail extremity present that same afternoon.

Muscle involvement charts have usually listed the lower extremities as most frequently involved — the anterior tibial, the peroneal and the quadriceps femoris muscles being paralyzed in that order. Next, combined involvement of legs and trunk or legs and arms is more frequent than involvement limited to one or both arms. These findings demonstrate the viral predilection for the lumbar and secondarily the cervical spinal cord enlargements. This has been tied in with gastro-intestinal and upper respiratory portals of entry by some workers.

The relationship of fever to onset of paralysis is variable, and although we think of fever as indicating activity and potential danger of paralysis, the fever may disappear and recur as paralysis occurs. Usually the higher and more sustained the fever, the more the likelihood of paralysis. One word of caution: Do not be misled into telling a family there is no danger of paralysis after fever leaves, even though that statement is usually valid. We know so little about the variable manifestations of an individual case of poliomyelitis that I feel it better to continue the "Don't know yet" statement until the case has run its full course. Too, although the fever may subside promptly, the muscular soreness and tightness may persist for months in individual cases and as long as this soreness persists, paralysis may occur.

Now, to go on to respiratory paralysis. The earliest indication of bulbar or bulbo-spinal involvement is nasal twang of the voice, and there may be an accompanying tendency to choke on liquids with regurgitation through the nose, and also weakness of the muscles of the glottis (visible in watching the swallowing process), and loss of palatal or gag reflex. Accumulation of mucus and saliva in the pharynx causes further difficulty. If the intercostals are all right, diaphragm involvement may be indicated by a sucking in of the upper abdominal wall on inspiration. There seems to be an association between deltoid weakness and involvement of the ipsilateral leaf of the diaphragm. Intercostal weakness is detected by mobility or lack of same of the chest wall, and also indicated whenever the patient uses his accessory muscles of respiration.

The differential diagnosis of poliomyelitis is of importance, in that conditions confused with the disease may well be neglected and suffer from lack of proper treatment. Meningitis and osteomyelitis are the two most important ones. Lymphocytic choriomeningitis, encephalitis, tuberculous meningitis, diphtheria with bulbar symptoms, acute rheumatic fever, tetanus, the pseudo-paralysis of scurvy and lead poisoning, and even trichinosis may mimic poliomyelitis, and the diagnosis may slowly become established, but specific therapy delay will not be as detrimental as in the two conditions previously mentioned. For example, we recently had one five-year-old patient who was tapped five times and x-rayed several times while receiving full drug therapy for osteomyelitis of the right femur, with a final x-ray proving osteomyelitis to be the correct diagnosis.

Often confused with poliomyelitis is the Guillain-Barrè syndrome, or polyneuronitis, with its symmetrical paralysis, accompanying symmetrical sensory changes, and the high spinal fluid protein without accompanying increase in cell count. Recovery is the usual rule and therapy is non-specific. Actually, in most epidemics and in published case reports, laboratory findings are found which fit between the elevated spinal fluid protein of poliomyelitis and the extremely high values found in polyneuritis, and with accompanying cell counts scattered anywhere from 0 to 1000, and it is often impossible to call such cases one or the other. "Virus disease of the central nervous system" would seem to be a good term for diagnostic use.

In regard to prognosis, I can only reiterate that a prediction as to course and end result of the individual case can not be made with any degree of accuracy during the acute stage. I do feel that parents should be encouraged by a statement that some muscle function may return over a period of approximately a year. Also, it is my belief that the public should be better informed regarding the fact that most poliomyelitis is NEVER diagnosed, and that we all have it, get over it, and are usually immune against subsequent attacks.

The prevention aspects of practical value to your patients are: Avoid fatigue and chilling; avoid exposure to crowds of children, especially new groups, but let them play with their regular neighborhood playmates; avoid travel to epidemic areas (usually well publicized); avoid elective oral surgery (including dental extraction); prevent food contamination by flies, improper cooking, or improper refrigeration; avoid the use of common drinking utensils. That does not appear to be too formidable a scare list, does it? As to avoiding elective immunization, more later. Too, as we have already implied, advocate breast feeding.

There is no specific treatment for poliomyelitis and probably cancer represents the only condition in which more types and kinds of therapy have been tried. Medical care of the mild abortive case to be treated at home includes only: 1) patient comfort, and bed rest for one week after signs and symptoms have disappeared; 2) proper care of naso-pharyngeal secretions and stool to prevent infection of others, although some writers make light of this last point.

Salicylates, phenobarbital or codeine may be used along with warm tub soaks for comfort, or hot packs, which involve keeping more members of the family busy. Daily enema, disinfection of stools, boiling of utensils, and diet as tolerated complete the major items of home patient care. Of course, some of the authorities strongly object to the use of sedation.

The paralytic case, additionally, needs frequent examination of involved muscle groups to measure progression or regression of activity, but not extreme stretching or manipulation against resistance. Put the uninvolved extremity through simple motions and ask the patient to match them with the involved arm or leg. Patient comfort in positioning is probably more important than a rigid "neutral position" with foot board and sand bag. The orthopedists may take exception but a firm mattress, a toe hole at foot of bed, a mother reading quietly to an interested child would seem to be better therapy, for a relatively short period, than the bedlam of too many crying children trying to get out of strange beds, while overworked nursing personnel try to keep them positioned properly, give daily vitamins, and write up charts.

The fundamentals of bulbar case care are the use of oxygen, pharyngeal suction for secretions, and attention to fluid balance including correction of potassium deficiency when present. Proper timing of tracheotomy and respirator care are the most difficult items. The use of oxygen may be reserved until cyanosis develops, but we have been giving it to all bulbar patients by tent in an attempt to assist the brain stem in its many functions. Additionally, the use of two parts 50 per cent glucose to one part normal saline, giving fifty cubic centimeters every six hours, as a dehydration measure, may be of benefit.

Tracheotomy has been recommended early for bulbar poliomyelitis, but in personal experience, it has not been too satisfactory. Autopsy material this year, on several bulbar patients who expired, has not indicated any correctible defects. In fact, the mucous secretions are pulled into the lungs so far by the respirator that suction does not help other than in a preventive fashion, and occurrence of diaphragmatic hernia due to respiratory pull is not uncommon. Too, tracheotomy is not a procedure without complication (as witness pneumothorax) and the operation is usually performed at a time when respirator decision is being made and family concern is at its peak. There are well documented articles presenting the pro side of tracheotomy, and I merely wish to point out personal experience with cases while reminding you again of the extreme variability of individual cases, and of the fact that selection for operation must vary widely from one treatment center to another.

The public has been over-sold on the iron lung and needs to know that it may drown the bulbar patient, but may save the life of a patient with **"chest muscle weakness."** The effect of transportation on the severity of acute poliomyelitis—an impression we all have—is best stated by figures from Willard Parker Hospital in New York City for the year 1949. They found of 380 "local" patients (those transported from adjacent boroughs of New York City) there were 20 deaths—5.3 per cent case fatality rate. Among the 113 transported patients (variable longer distances) there were 18 deaths—a fatality rate of 16 per cent. Our figures for approximately 130 cases in Alabama this year (city of Birmingham for "local", and elsewhere indicating "transported" patients) are 5 per cent case fatality "local" and 13 per cent "transported." The Willard Parker figures were subjected to further statistical study and their conclusion indicated that transportation over long distances may be harmful to a patient in the acute stage of poliomyelitis.

Any discussion regarding respirator use must conclude with the statement that the apparatus must be thoroughly understood by the attendant and it must be in good repair.

Next a few statements regarding other drugs or methods of treatment. Ruremethide, by injection or orally, usually is of assistance for urinary retention. Lipotrophic substances (methischol) have been given patients this year because fatty degeneration of the liver is a fairly consistent finding at autopsy. Interval positive pressure breathing (IPPB) by a pressure mask to face or attachment to tracheotomy tube will soon be more widely available. Also electrical stimulation of vagus nerve to diaphragm for respiratory cases is used at several treatment centers. Priscoline may be of use for patient discomfort to diminish spasm, pain and vasomotor dysfunction. Aureomycin and amigen (A and A), used intravenously, is based on laboratory work showing that the anti-viral activity of aureomycin against other viral infections is enhanced by high protein concentrate media. Ethionine, a relative of methionine, was recently found to stop the growth of poliomyelitis in tissue without harming the tissue. This report by Brown and Ackerman, of University of Michigan, represents the first time such a chemical has been found. It has not as yet been applied to patients.

Lastly, let us turn to the new controversy, now two years old, that of immunization procedure in poliomyelitis season.

Martin, in England, and McCloskey, in Australia, in studies of the 1949 epidemic, independently noted an association between the site of paralysis and antecedent injections made within 30 days. Anderson, at University of Minnesota, restudied their cases of the epidemic months of 1946, and concluded that there is a high degree of correlation between site of paralysis and the site of injection of antigen given one month prior to onset of poliomyelitis. These cases showed a different distribution pattern and a more severe paralysis when compared to children immunized in previous years, or never immunized.

In June, Ward summarized published and unpublished data for the **Journal of Pediatrics**, and concluded, "The present evidence seems clear enough to warrant the postponement of immunization and other elective inoculation during the summer and fall months when poliomyelitis is likely to appear in epidemic form." The **New York Times** printed news stories in June, stating this probable relationship, and at the same time, the New York City Health Department suspended immunizations against diphtheria and pertussis for all children over six months of age. This suspension was to last from June 15 to October 1 at all city health stations, and an estimated 25,000 children probably would have received immunization during this period.

Now, we are confronted with a problem. For years public health authorities and individual physicians have campaigned for immunizations against diphtheria and pertussis, with a remarkable decrease resulting in the morbidity and mortality from these diseases. Now comes a doubly difficult task recommending these immunizations be avoided during poliomyelitis season ONLY, and, also trying to explain to the public that these injections do not predispose a child to poliomyelitis.

Obviously, tetanus toxoid is indicated following certain injuries, and of course, the diabetic child needs his insulin. Too, we find that most poliomyelitis admissions have had one or more penicillin injections. The dehydrated infant must get parenteral fluids injected for diarrhea therapy, and local anesthetics are a necessity for much dental work. Fortunately, thus far, most writings indicate the tie-in of injection to possible paralysis involves only injections eliciting an antigen- antibody reaction. So for practical use — the delay of routine immunization beyond six months of age seems indicated during peak poliomyelitis months.

Intestinal Obstruction and Related Intestinal Lesions*

L. S. Santa, M.D.
St. Louis, Mo.

Physiological Manifestations leading to:	**Roentgen Signs**
1. Waves of peristalsis, attempting to overcome the obstruction, affect the bowel distal to the obstruction also, stripping it of gas and fecal material and leaving it collapsed and flaccid. It is possible to have a bowel movement after obstruction.	1. The intestine distal to the obstruction should not show evidence of feces or gas; the rectum should be free from gas. This is a very important differential point.
2. Obstruction prevents natural passage of intestinal material, causing proximal loop to dilate. Gas forms from putrefaction and other causes and cannot be absorbed, so that the intestinal loops proximal to the obstruction dilate. Any gas in the small bowel of an adult must be considered as abnormal.	2. Gaseous dilation of the proximal loops of intestine. Over-distension of intestine results in stretching of the valvulae conniventes, imparting a "herring bone" design to the dilated gut. The mesenteric attachment causes the gas-distended loops to arrange themselves back and forth across the abdomen in a ladder pattern.
3. As the intestines dilate, the blood supply will be interfered with because of the interstitial arrangement of the mesenteric arteries and veins in the intestinal wall. First, the venous return will be shut off, causing edema, and then the arterial supply will be obliterated, resulting in gangrene.	3. Edema caused by interference with the venous return causes fluid to exudate into the gut, resulting in fluid levels.
4. As over-distension continues, the arterial supply is finally shut off and gangrene results.	4. Gases of putrefaction continue the picture of gas distension, with multiple fluid levels. The occurrence of gangrene cannot be definitely determined.

Pitfalls in Diagnosis

1. Failure to properly identify the character and location of gas-distended intestinal loops. Barium enema will differentiate the large from the small bowel and may even indicate the location of the obstruction.

2. Evacuation of gas from the rectum by rectal tube or cleansing enema immediately before x-ray examination. Since so much depends on identification of gas in the rectum for differentiation between intestinal obstruction and paralytic ileus, it is well to ascertain these points in case of any doubt. Wangensteen apparatus or Miller-Abbott tube may modify the picture so as to introduce an error in diagnosis. Such procedures should not be employed until after a diagnosis is made.

3. Prevention of gas entering the rectum because of pressure from pelvic tumors, infection as in pelvic cellulitis, or blood as in ruptured tubo-pregnancy.

---

* Presented before the Section of Medicine at the eighty-third annual meeting of the Mississippi State Medical Association, May 16, 1951.

4. Differentiation from localized spastic ileus. This condition may produce isolated gas-distended loops of bowel without any obstruction, but the loops of bowel are always smaller than in intestinal obstruction.

5. Generalized spastic ileus occurs in similar conditions where there is agonizing pain such as ruptured tubo-pregnancy, ruptured ulcer, etc. The picture may be strikingly similar, but the pain is out of proportion.

PARALYTIC ILEUS

Physiological Manifestations leading to:	**Roentgen Signs**
1. Paralytic ileus is, as its name implies, due to complete muscular inhibition. It affects the entire bowel, large and small. The distended loops of bowel may leave their impression on each other.	1. Generalized gaseous distention of the entire bowel, small and large alike. The rectum is distended with gas.
2. The fluid seeps back into the bowel since the process of edema from gaseous dilatation and obstruction of venous return is the same as in intestinal obstruction.	2. Multiple fluid levels occur within the gas-distended bowel just as in obstruction.

1. In paralytic ileus, the gaseous distention of rectum and colon is of greatest importance.
2. A barium enema may be necessary to determine this point.
3. There is no actual pain from uncomplicated paralytic ileus other than discomfort.

LOCALIZED SPASTIC ILEUS

Physiological Manifestations leading to:	**Roentgen Signs**
1. Due to some unusual stimulation of the sympathetic nerves such as pain, from passage of ureteral stone or catheter, abdominal infection such as appendiceal abscess, etc., a segment of gut may lose its normal motility.	1. Isolated gas-filled intestinal loop, usually relatively small in character.
2. Some unusually sickly pain, but usually not too severe.	2. The caliber of the gas-filled bowel never reaches the same size as in obstruction, which helps differentiate the condition.

Conditions to be Noted

1. Extent and location of intestinal dilated loop.
2. Its degree of distribution.
3. The presence of some circumstance that may account for the local spastic paralytic process.

ARTERIAL MESENTERIC THROMBOSIS

Physiological Manifestations leading to:	**Roentgen Signs**
1. Attended with extreme pain and collapse. Initial reaction is intense contraction of all intestinal muscles causing "curling of bowel."	1. No demonstrable roentgen signs at very onset.
2. Soon followed by relaxation of bowel musculature and formation of gas in bowel.	2. Gas in bowel for considerable time may be slight; the distribution may be bizarre.
3. Gaseous distention increases since there is no venous drainage to carry it off; the distribution is seen to involve the entire small intestine and colon up to splenic flexure, constituting distribution of superior mesenteric artery.	3. Gaseous dilated loops fully as large as in intestinal obstruction affecting entire small bowel and colon up to splenic flexure.
4. Relaxation of bowel musculature allows blood from engorged veins to seep back into	4. Fluid levels develop within the gas-distended bowel, but these are scantier and are due to blood. Picture may resemble intestinal

intestinal lumen, from whcih it may be passed in a bowel movement.

obstruction at splenic flexure. Barium enema shows distal bowel flaccid and indicates no obstruction at splenic flexure.

Points in Diagnosis

1. The entire process is attendant with extreme pain and shock.
2. At first, pattern of gas-distended bowel is bizarre.
3. Later assume size and appearance of intestinal obstruction at splenic flexure.
4. Fluid levels are not as pronounced.

VENOUS MESENTERIC THROMBOSIS

Physiological Manifestations leading to:	**Roentgen Signs**
1. Initial reaction is attended with intense pain, but spasm of the musculature of intestine is not present. The bowel just lies there inert.	1. No demonstrable roentgen signs at first.
2. Waterlogging edema of bowel results from lack of venous return and plasma pours into intestines filling the lumen without gaseous distention. Ascites develops.	2. Waterlogged edema of bowel plus abdominal fluid produces a dense, homogeneous shadow throughout. Gas-distended loops of bowel are conspicuous by their absence. A few small collections of gas may be present but these are minimal.
3. Patient's condition progresses rapidly downhill with same symptoms as if he had bled to death.	

Histoplasmosis

Eva Linn Meloan, M.D.
Jackson, Miss.

It is commonly assumed, at least by pediatricians, that only in the very exceptional case, will tuberculosis fail to react to 0.1 mgm of O.T.. These exceptional cases include far advanced or overwhelming cases, such as miliary tuberculosis or tubercular meningitis in its terminal stage. Measles seems temporarily to suppress tuberculin allergy. The occasional case of lost sensitivity or anergy is also recognized, as is the recently infected subject who has not developed his sensitivity. This assumption of lost sensitivity has not been questioned, particularly in a large number of children who have failed to react to tuberculin and who demonstrate x-ray lesions in their chest.

Pulmonary calcification has generally been interpreted as evidence of healed tuberculosis, but it is by no means certain that this disease is the only important cause of such lesions. A number of reports have shown that in the areas of high rates of pulmonary calcification, a large proportion of the persons with these lesions have negative tuberculin reactions. This has led to a search for non-tuberculous origins of the lesions. In the southwest, evidence has been produced that coccidioidomycosis is responsible for a considerable amount of calcification. Studies revealed, with regularity, the fact that there is in certain sections of the United States a prevalence of pulmonary calcification far beyond what can be explained on the basis of tuberculosis, as revealed by tuberculin testing. All the studies emphasizing the discrepancy between tuberculin testing and x-ray evidence have been from groups of young people living on or adjacent to the Western Appalachian Plateau, or on the slopes of the Mississippi River basin and the bordering states of the western slopes of the Mississippi River.

Extensive skin testing in these areas ruled out coccidioidomycosis as the causative factor for the benign calcifications and it became apparent that Histoplasma capsulatum could be investigated as a possible etiological agent. This organism, a fungus which grows in tissues in the yeast form, and on culture media in the mycelial form, produces lesions which simulate many common diseases. It produces ulceration of the mucosa and miliary lesions with caseous necrosis and granulomata which closely resemble tuberculosis. A variety of clinical manifestations make it seem quite possible that benign forms may exist forming a clinical picture with the primary complex going on to calcifications such as in tuberculosis.

---

* Read before the Section on Pediatrics at the eighty-third annual session of the Mississippi State Medical Association, May 16, 1951.

The Histoplasma capsulatum in acute cases can be demonstrated in the blood smear, bone marrow, and all the body tissues. An intradermal test of 0.1 cc. of a 1:1000 or 1:100 dilution of an antigen prepared from a filtrate of an old broth culture of Histoplasma capsulatum is a positive in 48 to 72 hours. The skin test reaction remains positive for two to three weeks. Edema surrounded by a large area of erythema is present in positive reactions. Reactions called positive were those having a diameter of induration of over 5 mm. Negative reactions had no enduration or erythema. This skin test has been found negative in acute and terminal cases where the disease has been proved by the presence of the organism in the blood stream or tissues. Transmission of the disease is theoretically possible, but if it commonly occurs it is not recognized. It has been found that the organism remains viable after room drying for at least two months and will withstand 45 degrees C. for 30 minutes. The portal of entry is not known. Infected bites, ingestion and inhalation have been suggested as possible modes. Attention to the ear as a possible primary focus has been mentioned because of an associated otitis media of fungus infection of the ear, noticed before or during the course of the illness in some of the reported cases. Domestic pets, as a source, have been mentioned because the disease has a predilection for the infant age group.

It has been concluded, based on many exhausting studies, that a mild, probably subclinical form of histoplasmosis is responsible for a high proportion of calcification seen in the x-rays of tuberculin negative reactions.

CASE REPORTS

Twelve-year-old girl. onset of illness with a small abscess socket of one of deciduous teeth. Fever continued after extraction. Clinical laboratory test negative. All repeated after one month of fever.

Physical examination showed positive findings; slightly enlarged spleen and generalized superficial lymphadenopathy. Low grade fever continued 3 months. In bed one month. Tuberculin intradermal 1:1000 and 1:100 negative. Histoplasmin 1:1000, positive at 72 hours (after one month fever) 7 mm. induration, 4mm. erythema. X-ray of chest reported as early generalized tuberculosis. Mother had been treated during early adolescence with bed rest because of pulmonary tuberculosis.

Six-year-old girl, onset with mild upper respiratory infection, pharyngitis and sinusitis. Child was ill with fever four weeks before skin testing. At onset, for 24 hours there was T 102 degrees. Fever after this time was to 100.6 degrees. During the third week there was another exacerbation of T 102 degrees, following a chill. Physical examination showed positive findings; enlarged spleen. shotty lymph glands in neck, axilla, epitrochlear and inguinal areas. Clinical laboratory tests all negative. Repeated after four weeks. Tuberculin 1:1000 and 1:100, negative. (repeated). Histoplasmin—positive six and one-half mm. induration, 3mm. erythema. Continued low-grade fever for two and one-half months. Child's mother, father, and two older brothers showed pulmonary calcifications. Mother and brothers both demonstrated a markedly positive histoplasmin skin test. Father markedly positive histoplasmin, 2 plus positive 0.T. 1:1000.

Eight-year-old girl, became ill March 7, 1947. She had been tired and irritable for one month prior to onset. Fever of 100 degrees. second day fever was 101 to 102 degrees There was no associated cough, no cold. no rash. no glandular involvement, no gastrointestinal involvement. et cetera. The fever persisted for three days; she was clear of fever for two days; then the temperature was 102 to 103 degrees the following day. She was seen by a local physician in Vicksburg, Mississippi, and was hospitalized for 16 days in the Vicksburg Infirmary. The diagnosis was primary atypical pneumonia. It was said that she also had some pus in her urine. She was given intramuscular penicillin for 14 days. and was discharged from the hospital after having been free of fever for two days. After the discharge, her temperature had varied from normal to 100 degrees, a.m. and p.m.; which persisted for some time.

The child had modified red measles at six months of age, pertussis. mild. at 18 months of age. chickenpox at two years of age. She had a spasm of coughing when she was three years old, of unknown cause, that lasted nearly two hours. She has been unusually well, except for these illnesses. There have been no previous chest x-rays made.

Examination on April 23, 1947: weight 63 pounds 4 ounces. height 51 inches. Temperature 99 8 degrees. This child was a large. well nourished child apparently very tired, a pallor to the skin. There are no positive physical findings. Intradermal tuberculin 1:1000 positive. three-quarters cm. Histoplasmin skin test positive. 4 plus; area a swelling two and one-half cm.. area of erythema 7 cm. Bed rest three months because of low-grade fever. The child gained weight during this time. Her appetite was very good. No cough.

BIBLIOGRAPHY

1. Brahdy. M.B. & Katz. S.H.: Effect of Transportation on Severity of Acute Poliomyelitis. J.A.M.A., 146. 772. June 30. 1951.

2. Lans, H.S.. Stein. J.F., Becker, R.J.. Hoyne, A.L., & Meyer K.A.: Potassium Deficiency in Bulbar Poliomyelitis. J.A.M.A., 146. 1017, July 14. 1951.

3. Anderson, G. W., & Skaar, A. E.: Poliomyelitis Occurring after Antigen Injection. Pediatrics, 7. 741, June 1951.

4. Stimson P. M.: The Treatment of Acute Poliomyelitis. Journal of Pediatrics: 39. 144, August 1951.

5. Seigel. M.. Greenberg, M., & Maygee. M. C.: Tonsillectomy and Poliomyelitis I & II Journal of Pediatrics. .38: 537. May 1951.

6. Veeder. B. S.: Polio Problems for the Pediatrician. Journal of Pediatrics, 39: 263, August 1951.

7. Daniel. W. A.: Diagnosis and Early Treatment of Poliomyelitis, Journal of Medical Association of Alabama. 21: 4. July 1951.

8. Editorial: When Polio Comes: General Practitioner. 4: 30 August 1951.

9. Ward. R.: Paralytic Poliomyelitis following immunizing Injections. Journal of Pediatrics, 38: 781, June 1951.

10. Martin. J. K.: Local Paralysis in Children after Injections, Archives Diseases of Children, 25: 1 March 1950.

11. McCloskey. B. P.: The Relation of Prophylactic Inoculation to the Onset of Poliomyelitis, Lancet, 258: 659. April 1950.

12. Hoyne, A. L. & Lipton, I.: Second Attacks of Poliomyelitis, J.A.M.A., 146: 707, June 23, 1951.

Hemorrhage in Pregnancy*

J. C. Russel, M.D.
Cleveland, Miss.

HEMORRHAGE IN PREGNANCY is a serious disorder which taxes the ingenuity of the attendant. Accurate diagnosis is often difficult and successful management more so.

The purpose of this paper is to review briefly the literature and present another case of an extremely rare type of hemorrhage. This is spontaneous retroperitoneal. While not necessarily limited to the pregnant state, it must be considered under certain circumstances.

Quoting from O'Connor and Bradley, Potocki in 1918 reported a case of retroperitoneal hemorrhage which complicated a pregnancy of two and one-half months. The presenting symptoms were pain in the lower abdomen following intercourse. The pain gradually extended to the left side and some degree of shock was present. The diagnosis was ruptured tubal pregnancy or pregnancy with a twisted ovarian cyst. Laparotomy revealed an extensive retroperitoneal hemorrhage which did not extend into the true pelvis. The patient expired on the operating table. Autopsy failed to reveal a bleeding vessel. Most of the 1200 to 1800 cc. hemorrhage was around the left kidney so Potocki concluded this was probably due to a miliary aneurysm of the kidney.

Low in 1944 reported a fatal case in pregnancy. The patient was within two weeks of term. She was hospitalized because of severe pain in the left upper quadrant. Shock ensued soon after the onset of pain. A transfusion was given and Cesarean section done. The essential findings were massive retroperitoneal hemorrhage extending behind the colon and both renal areas. Death occurred 17 hours after operation. The left ovarian artery presented some aneurysmal dilatation at its origin.Kenny in 1945 reported a similar case in which the patient, a preeclamptic at term, had pain and shock after intercourse. An autopsy of extensive hemorrhage extending from the diaphragm to the pelvic brim was discovered but no definite source of bleeding was found. Wilson, in a case cited by Kenny, delivered normally at full term a patient who 26 hours postpartum experienced severe pain and collapsed. She died on the operating table. At autopsy an aneurysm of the left renal artery was found.

The following case is presented because it is unique in two respects: 1) It is the second known case of retroperitoneal hemorrhage complicating pregnancy which has recovered. 2) This apparently represented the second episode of hemorrhage for this patient.

Case Report

First admission: Mrs. S. E. C. was admitted to the City Hospital March 16, 1943, because of chills and fever. Patient grav. 6 at term. Temperature 104 degrees, catheterized specimen revealed many pus cells, white count 28,600. Intravenous fluids and sulfadiazine given. Spontaneous onset of labor with normal delivery ensued five hours after admission. Postpartum convalescence uneventful with patient ready for discharge 3-22-43. She suddenly had pain in left renal region and felt faint. Examination revealed flank tenderness and rigidity with questionable mass in left renal area. Sulfadiazine and glucose continued. Definite mass in left renal area and septic type of temperature curve. Because of large fixed renal mass, pyuria and septic temperature, a decision to drain left perirenal area was made. Consequently, on 3-28-43 exploration under gas-ether anesthesia was done through a left flank incision. The perirenal area was exposed and found to be filled with old organized blood clots. Drains were left in and closure accomplished. The temperature gradually subsided and the pyuria cleared. At no time was there any drainage and the renal mass decreased gradually. In October 1943 she was seen in consultation by aurologist and a radiologist, because of a small, orange-sized retroperitoneal mass. The diagnosis was possible retroperitoneal sarcoma and exploration advised but refused.

Second admission: 12-11-44: Patient grav. 7 at term. Prenatal care had been rather neglected. Seen by her physician and referred to hospital because of severe epigastric pain and "gas around heart." Given laxative and enema on admission with no relief. Pulse 72, respiration 20, and blood pressure 160/100 at 11:30 a.m. Despite several hypodermics of morphine patient continued to complain and "abdomen seemed tight." At 6:15 p.m. patient had "faint feeling," became pale and short of breath, pulse thready and rapid. First seen by me at 8 p.m. At this time the blood pressure could not be obtained and the pulse was 140/160. Plasma and glucose given after a venous cutdown. Stimulants, oxygen and blood given. Pressure and pulse could then be obtained. Abdomen tense. Unable to identify uterus but there was a small amount of vaginal bleeding. No fetal heart tones heard. The patient's general condition seemed good enough to warrant exploratory laparatory under local anesthesia. The most probable diagnosis was premature separation of the placenta. Consequently, using procain 1 per cent by local infiltration a median abdominal incision was made and the abdomen opened. The uterus was a normal term pregnant uterus which was displaced to the extreme right by a large retroperitioneal hematoma which had infiltrated the left pelvic gutter and renal region and extended through the leaves of mesocolon and descending colon. The mass was tense and fluctuant but did not pulsate. The uterus was emptied of a recently dead fetus through a classical uterine incision. And 100 cc. whole blood with citrate were given on the table and the abdomen closed. Postoperative convalescence was extremely stormy with three different episodes of apparent

(Continued on page 262)

---

* Read before the Delta Medical Society, Greenville, Miss., Oct. 10, 1951.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D.	Editor-in-Chief
MILDRED P. ANDERSON	Assistant Editor
David E. Guyton, Blue Mountain College	Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION

Dr. J. G. Thompson President	Jackson
Dr. Lamar Arrington President-elect	Meridian
Dr. Geo. W. Twente Secretary	Jackson
Dr. Rowalnd B. Kennedy Executive Secretary	Jackson

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

H. T. Smith, M.D. McGehee, Ark.	President
L. S. Nease, M.D. Fayetteville, Ark.	President-elect
Howard A. Nelson, M.D. Newport, Tenn.	Vice-President
Fount Richardson, M.D. Greenwood, Miss.	Vice-President
Luke W. Nabors, M.D. Morristown, Tenn.	Vice-President
Thurman Crawford, M.D. Memphis, Tenn.	Secretary

Mid-South Associate Editors

H. King Wade, M.D.	Hot Springs, Ark.
Frank M. Acree, M.D.	Greenville, Miss.
R. L. Sanders, M.D.	Memphis, Tenn.

State Associate Editors

L. T. Carl, M.D.	Jackson, Miss.
J. Harvey Johnston, M.D.	Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

Mississippians are justifiably proud of Dr. Arthur C. Guyton of Oxford, Mississippi, who was recently picked by the Junior Chamber of Commerce as one of the outstanding young men of this nation. Thirty-three years of age, a professor in the department of physiology at Ole Miss Medical School, he has been doing research in the field of heart disease for several years. An attack of polio in 1946 left him partially paralyzed. He is a graduate of Harvard University. Dr. Arthur Guyton is a fine Christian citizen interested in every good cause for his state. He is especially endowed with the master mind of a true scientist, one who loves truth. He loves to search for the unknown that man may have life and have it more abundantly. He possesses mental honesty. His mind loves to follow the truth and it has the moral courage to give it free rein. In the field of human values he is a rare diamond found here in our own state.

Dr. Arthur's father, Dr. B. S. Guyton, has rendered fine service in the medical field in Mississippi. We owe much to him for the fine success of our two-year medical school. He served it well as dean and his interest and his influence has been with and for it for many years. Dr. Jack Guyton, brother to Dr. Arthur, is well known at John Hopkins of Baltimore, where he is an able instructor and lecturer on ophthalmology. The B. S. Guyton family has brought honor and has served our state exceedingly well.

DR. WALL

Doctors from our ranks in Mississippi continue to drop out. The spaces must be closed, but in some cases replacements are impossible. Dr. Percy Wall of Jackson passed this month to his reward. He was one of the best-known doctors in this state and his services had been for almost a half century. He was a fine surgeon, an outstanding student in medicine, and in the field of literature he was very versatile. Dr. Wall at the time of his death was serving as delegate to the American Medical Association, having served in this capacity most ably for a number of years. He discharged his duties as laudably as president of the State Medical Association. He was an outstanding leader in organized medicine in his county, state and in the United States. A man of deep conviction, he always stood on his beliefs of the right. As speaker of the house of delegates in our state association he proved his ability as a parliamentarian and showed himself to be a highly fair-minded man. He was often called upon to meet emergencies at medical meetings.

Dr. Percy Wall was known by every doctor and beloved by many. He was a Christian citizen that made his influence felt in his city and state. His fine leadership and his warm personality will be missed for time to come.

(Continued on page 267)

News and Comment

OB. AND GYN. CONGRESS

The American Congress on Obstetrics and Gynecology, of Mississippi, of which Dr. R. A. Street, Jr., is chairman, announces that the Fifth American Congress will be held at the Netherland Plaza Hotel, Cincinnati, Ohio, March 31 through April 4, 1952.

This meeting is not only for physicians but also for nurses and public health personnel who are interested in obstetrics and gynecology problems as the meeting includes discussions of all the various aspects of the subject. Any further information desired can be procured by writing the American Committee on Maternal Welfare, 116 South Michigan Avenue, Chicago, Illinois.

TECHNOLOGISTS TO MEET

The Mississippi State Society of Medical Technologists Convention will be held at the Lamar Hotel, Meridian, Mississippi, April 4, 5, 1952.

Placement Service for technologists, through the Mississippi State Society of Medical Technologists may be obtained by sending requests to Mrs. Frances Scales, Box 30, Starkville, Mississippi.

AMERICAN COLLEGE OF ALLERGISTS

The eighth annual meeting of the American College of Allergists will be held this year at the William Penn Hotel in Pittsburgh, Pennsylvania, on April 7-8-9. The College is offering an unusually practical program for its fellows, members and guests.

An innovation for meetings of allergists will be a session devoted to the problems of the allergic patient as met in modern industrial medicine. All reputable physicians are welcome to attend. For more particulars, write the College, LaSalle Medical Building, Minneapolis 2, Minnesota.

Instructional Course

On April 4-5-6, 1952, also at Pittsburgh, the American College of Allergists will offer an instruction course in allergy, around 60 well-known authorities in the field scheduled to give addresses, clinical talks and demonstrations. The program has been designed for physicians in other fields of practice, especially those in general practice, that they may learn to recognize and manage the allergic component in the complaints of their patients.

NEW HEALTH CENTER OPENS

The Lowndes County Health Department celebrated the opening of the Lowndes County Health Center, Tuesday, February 12, 1952, 1:30-4:30 p.m., Military Road, Columbus, Mississippi.

Dr. Felix J. Underwood gave the address and made the formal presentation.

TENNESSEE STATE MEDICAL ASSOCIATION

The 117th annual meeting of the Tennessee State Medical Association will be held at the Andrew Johnson Hotel, Knoxville, Tennessee, April 7, 8, and 9. Dr. Ralph H. Monger, Medical Arts Building, Knoxville, Tennessee, is chairman of the hotel reservation committee.

CHEST PHYSICIANS TO MEET

The fifth annual postgraduate course in diseases of the chest, sponsored by the American College of Chest Physicians, will be held at the Warwick Hotel, Philadelphia, Pa., March 24-28, 1952. Applicants will be accepted in the order in which they are received by American College of Chest Physicians, 112 East Chesnut Street, Chicago 11, Ill.

REFRESHER COURSE FOR TECHNOLOGISTS

Baylor University College of Medicine, Houston, Texas, announces a refresher course in clinical biochemistry for medical technologists, to be held August 18-23, 1952. Application may be made to Dr. J. H. Gast, Department of Biochemistry, Baylor University College of Medicine, Houston 25, Texas.

AMERICAN ACADEMY OF GENERAL PRACTICE

The fourth annual assembly of the American Academy of General Practice will be held March 24-27, 1952, in Atlantic City, N. J. The Haddon Hall will be the convention headquarters hotel.

FOR SALE

200 M A Westinghouse shock proof diagnostic X-ray machine, motor-driven table and spot film device. $2900.00 cash, FOB Selma. Dr. R. N. Long, Selma, Ala. 2t

ANNOUNCEMENTS

Dr. George R. Livermore announces the association of Dr. Fontaine B. Moore, Jr., for the practice of urology and urological surgery, 815-20 Medical Arts Building, Memphis, Tenn.

J. E. Whiteleather, M.D., is pleased to anouce the association of H. J. Thompson, Jr., M.D., in the practice of radiology, 899 Madison Avenue, Baptist Memorial Hospital, Memphis, Tenn.

Deaths

DR. JAMES D. BILES

Dr. James David Biles, 79, vice-president of the Bank of Sumner, died in the Baptist Hospital in Memphis, December 21.

A physician for more than 50 years, Dr. Biles retired two years ago when he became ill.

Born in Water Valley, Miss., he was the son of the late Dr. W. H. Biles and Mrs. Elizabeth Addington Biles.

He was graduated from Louisville Medical College in 1898 and was a charter member of the Phi Chi medical fraternity. He served as a surgeon for the Illinois Central Railroad for 50 years.

Dr. Biles belonged to the American Medical Association, the Mississippi Medical Association, the 50-Year Club, the Clarksdale and Six Counties Medical Society and the Tallahatchie County Medical Society.

He was a life member of the Elks, and belonged to the Woodmen of the World. He was also a retired planter, and was a member of the Board of Aldermen at Sumner for 30 years.

He leaves his wife, Mrs. Willie Lacey Biles of Sumner; two daughters, Mrs. Aubrey H. Bell of Greeenwood, and Mrs. Eugene Lowe of Glendora, Miss.; two sons, Dr. James D. Biles, Jr., of Memphis and Dr. G. Lacey Biles of Sumner; three sisters, Mrs. Will Henry and Mrs. E. R. Walton of Water Valley and Mrs. W. W. Wood of Hazelhurst, Miss.; a brother, W. S. Biles of Chattanooga, Tenn.; 13 grandchildren and one great-grandchild.

DR. J. H. PEARCE

Services for Dr. James H. Pearce of Falkner, active in medicel practice in Tippah County nearly 50 years. Burial was in the cemetery at New Albany.

Dr. Pearce, who was 79, died January. He was born in Mooreville, Ark., and moved to this section as a boy. He was the son of the late Dr. L. S. Pearce.

Dr. Pearce was a member of the Northeast Mississippi Medical, the Mississippi Medical and the American Medical associations. He was a Mason and a Baptist. He was graduated from the University of Tennessee in 1904.

Dr. Pearce was also a member of the Fifty-Year Club.

He leaves his wife. Mrs. Effie Pearce; two sons, Dr. James F. Pearce of Wauerika, Okla., and Dr. John C. Pearce of Jackson, Tenn.; two daughters, Mrs. Rex Waller of West Orange, N. J., and Mrs. W. P. Ward of Houston, Tex.; four brothers, W. M. Pearce of Bowling Green, Ky.; Dr. Lee Pearce of Collierville, Tenn.; John E. Pearce of Sardis, and L. S. Pearce of Falkner; two sisters, Mrs. W. W. Wright and Mrs. George Durbin, both of Falkner.

DR. SAM E. EASON

Dr. Sam Echols Eason, prominent New Albany physician and president of the Mississippi State Board of Health, died January 26 at the New Albany hospital. He had been in poor health for five years.

With the exception of one four-year period, Dr. Eason had served continuously as a member of the State Board of Health since 1912, serving under eleven governors. He had been president of the Board since 1944. He served as Union County health officer from 1907 till 1912.

At a meeting of the Board of Health in July, 1951, Dr. Eason was especially commended by all Board members for his "outstanding record of service."

Twice Dr. Eason was elected vice-president of the Mississippi State Medical Association. For four years he served the Association as councilor of the third district. He had also served as president of the Tippah-Union Medical Society and president and secretary of the North Mississippi Medical Society.

Dr. Eason was born in Tate County. He received his medical education at Memphis Hospital Medical College, now the University of Tennessee. Since 1906 he had engaged in the private practice of medicine in New Albany.

In addition to his wife, Dr. Eason is survived by three daughters: Mrs. Eckhart of Columbia, Mrs. B. W. Biedenharn of Monroe,La., and Mrs. Shackelford of Macon, Ga.

DR. EUGENE R. SHURLEY

Dr. Eugene R. Shurley, physician of Money, died at the Greenwood Leflore Hospital January 6 after a short illness. He was 67.

Services were held at Riverside Baptist Church with Rev. D. I. Young, Jr., of Magee, officiating.

Dr. Shurley had practiced medicine in the Money community for the past 27 years. He was a member of the Baptist church. During his long and active service at Money he had endeared himself to many friends.

He leaves his wife, Mrs. Harriet G. Shurley, and two sons: Harry Dodge Shurley, New York, and Robert G. Shurley, Hondo, Texas, also a sister, Mrs. Addie Holloway, Memphis, and three grandchildren.

DR. AARON EVERETT

Funeral services for Dr. Aaron Green Everett, 77, of Friars Point, who died February 5, were held the following day from the McInnis-Porter Funeral Home in Clarksdale.

Dr. Everett had been hospitalized since some time in November as a result of injuries received in a highway accident between Clarksdale and his home in Friars Point. His wife, who was with him at the time, was critically injured, but has sufficiently recovered to return to her home.

He was graduated from Memphis Hospital Medical College, Memphis, Tenn., in 1900.

The beloved Delta physician went to Friars Point in 1903 and had a wide practice during the half century he practiced in that section of the state. He was born at Hickory, and was a member of a prominent Newton County family. Dr. Everett was a member of the Methodist Church, a member of the Fifty Year Club of Doctors, and was a member of a number of medical organizations and societies. He also was a Mason.

Besides his wife, Mrs. Lillie Aderholdt Everett, he leaves a step-daughter, Mrs. C. E. Sessions of Friars Point; three brothers, J. C. Everett of Hickory, Dr. H. B. Everett of Memphis, Tenn., and W. M. Everett of Hickory; two sisters, Miss Lula Everett of Hickory and Mrs. Lewis Yarbrough of Jackson; and a number of other relatives in Newton County.

DR. SAMUEL EDWARD IZARD

Dr. Samuel Edward Izard, 81, died at 10 a.m. February 4 at his home in Newhebron. He had been in ill health for two years but was not retired from practice.

Dr. Izard was a charter member of the Newhebron Baptist Church, organized in 1905. He had practiced medicine in Lawrence County for more than 52 years. He was a member of the Fifty Year Club, organized only a few years ago in Mississippi.

He was also a member of the Tri-County Medical Association and had served as officer in that medical society. He had been an active member of the Newhebron Baptist Church. He was a graduate of the University of Nashville, Nashville, Tenn., in 1900.

Dr. Izard was a native of Copiah County but had lived in Lawrence for many years. His survivors include: his widow, Mrs. Mae Drummond Izard, Newhebron; two sons, Drummond Izard, New Jersey, and Dr. Edward Izard of Charleston, S. C.; four daughters, Miss Fannie Mae Izard, of New Orleans; Mrs. J. H. Hough of Columbia; Miss Jessie Vee Izard of Newhebron and Mrs. D. M. Ferris of Shaw; seven grandchildren, three sisters, Mrs. M. L. Foster, Monticello; Mrs. Florence Crews, Mrs. Janie McCardle, both of Hazlehurst; four brothers, R. M., Pelahatchie; Henry, Biloxi; Oliver, Newhebron, and Z. L., of El Paso, Texas.

DR. D. F. STUBBLEFIELD

Funeral services were held at Black Jack Church for Dr. David Fort Stubblefield, 71-year-old resident of the Vaughan community. Dr. Stubblefield passed away in January at the King's Daughters Hospital in Yazoo City.

Dr. Stubblefield was born Aug. 28, 1880, in Yazoo County, the son of Mr. and Mrs. Dave Stubblefield. He was graduated from St. Louis University, St. Louis, Mo., in 1904.

His survivors include his daughters, Mrs. J. T. Dixon and Mrs. H. S. Pepper of Vaughan; a son, and two brothers, D. B. Stubblefield of Mt. Carmel. Ill., and Calvin F. Stubblefield of Bentonia.

DR. J. L. HASIE

Funeral arrangements were completed for Dr. J. L. Hasie, head surgeon of the Kemper County Hospital in DeKalb, who died January 14 in Daytona Beach, Fla., of a heart attack. Dr. Hasie was 53.

A physician for many years in this section of the state, Dr. Hasie served as a member of the medical staff of the George Hixon Memorial Hospital at Electric Mills before entering the Army Medical Corps in World War II. Upon his return from Army duty in 1945, he opened a clinic in DeKalb and 18 months ago became head surgeon of the new hospital.

He was a graduate of the University of Tennessee School of Medicine and was a Methodist and a Mason.

He is survived by his wife, Mrs. Nadine Hasie; a son, Jimmy Hasie, and three daughters, Aline Hasie, Collette Hasie and Vickie Hasie, all of DeKalb.

DR. G. M. ASH

Dr. Glenn Moore Ash, 72, of Lexington, died February 12 in the hospital there.

His parents were Matthew Franklin Ash and Sophrina Kathryn Moore. He was a native of Madison County.

Dr. Ash was graduated from Tulane University, New Orleans, La., in 1913, and had practiced in the state since that time.

DR. F. S. HERRIN

Services for Dr. Frederick Sturgis Herrin, 72, prominent medical practitioner of Summit, were held from the Summit Methodist Church February 9 at 2 o'clock with the pastor Rev. Hugh McRaney conducting.

Dr. Herrin suffered a severe heart attack at his home the day before death followed in a few hours. He had been a Summit physician for the past decade.

Among his many traits that marked him as a leading citizen of the region was his intensive interest and love for flowers. He was one of the organizers and the first president of the Men's Camellia Club of Pike County.

Dr. Herrin was a graduate of the University of Alabama, Tuscaloosa, Ala., class of 1902.

He leaves his wife, Mrs. Janella Lansing Herrin; a son, William Frederick Herrin, of Bogalusa, La., daughters, Mrs. Ruth Lirely. of Dallas, Texas; two brothers, Emile, of Moss Point, and L. Herrin, of Mobile; two sisters, Miss Clara Herrin, of Moss Point, and Mrs. Norman McInnis, or Mobile.

Dr. J. P. WALL

Services for Dr. James Percy Wall, former president of the State Medical Association and veteran practitioner of Jackson, who died February 25 were held the following afternoon at the First Baptist Church, Dr. Douglas Hudgins and Dr. W. A. Hewitt officiated, Dr Wall was 73.

He was born at Magnolia, and served in World War 1 as a captain in the Medical Corps.

Dr. Wall was on the Baptist Hospital board a deacon in the First Baptist Church, a member of the American Medical Association and College of Physicians and Surgeons, the Central Medical Society, and a charter member of the Jackson Kiwanis Club.

He served as first commander of the Henry H. Graves Post of the American Legion in Jackson and also on the Hinds County Welfare Board.

He leaves a daughter, Edith wall.

Dr. MARVIN B. WARE

Services for Dr. Marvin Brister Ware, who died February 21 were held at the First Presbyterian Church where he served as a deacon. He was 46.

D. Ware was born in Memphis, He had suffered a heart attaek and was convalescing form infulenza.

Hemorrhage

(continued from page 258)

hemorrhage, characterized by pain, pallor and collapse. Treatment was symptomatic. The patient was discharged on the twenty-eighth postoperative day in good condition. She has been seen on several occasions since 1945 and has apparently no further difficulty.

REFERENCES:

1. Potocki. Hematome retroperitoneal au cours della gestation.
2. Low, D. M. Spontaneous retroperitoneal haemorrhage complicating pregnancy.
3. Kenny, M., and Doniach, L. Case of retroperitoneal haemorrhage causing death in late pregnancy.
4. Wilson, E. Cited by Low and Kenny and Doniach.
5. Eiss, S. Retroperitoneal hemorrhage; report of two cases.
6. Lawen, A. Uber retroperitoneale and intraperitoneale spontane Massenblutungen.
7. Halban, J., and Seitz, L.

Summary

Retroperitoneal hemorrhage is not a common complication in pregnancy but apparently occurs often enough to be considered in the differential diagnosis of abdominal pain followed by syncope and shock.

The case presented apparently represents two different episodes of retroperitoneal hemorrhage complicating pregnancy. The site of hemorrhage in both instances was apparently the left renal area.

MISSISSIPPI STATE BOARD OF HEALTH

Felix J. Underwood, M.D., Executive Secretary

HEALTH EDUCATION

Cassie B. Smith, B.A., M.S.P.H.
Associate Director

The objective of the health education program is to reach the public with information on the laws of living which help to prevent disease and illness and which promote healthful living.

Visual Education

There is a continuous and ever-increasing interest among the public in matters of health. Practically every educational group in the state is incorporating some phase of health instruction in the various programs for which it is responsible. Since the State Board of Health has the only complete library of health films, they are in demand by hospitals, doctors and nurses for teaching trainees and staff members. Sociology departments in every college of the state are requesting the films on mental health and guidance to an extent beyond the availability of prints. The majority of the public schools have scheduled films to be used throughout the school year. The same demand has been made for pamphlets, information on special diseases, health problems and health studies.

Approximately fifty-eight loans to county health departments and state employees were made on visual aid machines during the last half of 1951.

It is felt that the placing of correct health information in the hands of instructional groups is an economical way of harnessing the educational resources of the agencies and institutions represented by these groups.

Radio, Newspapers and Magazines

Three weekly radio broadcasts and weekly state-wide news releases and special releases have continued to be effective means of reaching the masses with information on individual, family and community responsibilities for health promotion and disease control as well as the wise use of medical, public health and dental services.

Broadcasts over station WJDX covered the usual variety of public health problems and conditions. In addition, the local medical society has participated in this health program by supplying private physicians as speakers when requested. The recorded series **Main Street Medicine** and records on cancer were presented over WRBC each Saturday morning. The maternal and child health series has continued over WJXN. Special radio time was secured for speakers at the biennial cancer meeting.

Newspaper publicity in the form of special news releases and the State Health Officer Says column went out on narcotic addiction among youth, heart disease control, cancer, x-ray shoe fitting machines, full-time health departments, malaria, individual responsibility for health services, hospital insurance, physicians' Fifty Year Club, and foreign visitors.

Contacts with Other Official and Civic Groups

A great deal of assistance with health education techniques and subject matter has been given by meeting with the staffs of other agencies. The staff of the health education division of the State Board of Health met with the home demonstration agents of the white race for three district meetings of all agents working in the southern part of the state. The subject for these meetings was the place of the home demonstration agent in promoting good mental health in the family and among 4-H club groups. The coordinator in health education of Extension Service and staff of the health education office of the State Board of Health were responsible for health seminars at 4-H Club Congress, at Farm and Home Week and at Annual Agents' meetings at State College.

Assistance was also given the Negro leaders through a two-day working conference on health problems of the Negro race and the Negro agents' opportunity for assistance through health education.

All-day working conferences were held with the teachers of the Greenwood, Aberdeen, Ackerman, Carthage and Jett school systems in September and October.

As chairman of the health education section of the health, physical education and recreation section of the Mississippi Education Association, the associate director of the health education division has been able to be of assistance to members with their health education activities in the schools. Assistance in health understanding was given with a school administrators' workshop which was held in Jackson in June.

With the associate director as chairman of mental health education of the Mississippi Congress of Parents and Teachers, a great amount of health education in program planning for local parent-teacher associations has been accomplished. The staff of the health education office served as consultants for health and family life education during an intensive study of this subject by parent-teacher association presidents of local organizations and program committee chairmen.

Assistance has been given voluntary health agencies, particularly those devoted to control of tuberculosis, cancer, heart disease and poliomyelitis.

Services to Public Health Staff

Assistance to the state and county public health employees with educational techniques and media has been a major function of the health education staff. Discussions on community organization were held during recent months at two district meetings of nurses, and on the subject of school health at one district meeting. Enlisting community cooperation in health services was the subject discussed with the entire staffs of local health departments in Choctaw, Fayette, and Montgomery counties. Orientation in health education was given sanitarians in training. Regular consultant services were rendered health educators in Lee, Forrest, Lowndes, Washington, Coahoma, Bolivar and Marshall counties through periodic visits to their counties and through correspondence. A two-day working conference was provided for these health educators.

Educational Materials Prepared

Exhibits were scheduled for the State and county fairs, for Farm and Home Week at State College, and for institutes at the University of Mississippi and State College. Exhibits were prepared for the vision testing program of the School Health Service. Other materials prepared included: twelve news sheets, five booklet covers, twelve handbills, twelve pen and ink layouts for pamphlets, forty-six signs and placards and four miscellaneous books.

SCHOOL HEALTH NEWS

The Legislature appropriation for corrections of physical defects among school children in Mississippi made possible 5,665 corrections during 1951. Type and number of physical defects corrected are indicated below:

Malnutrition	40	Posture	6
Skin and Scalp	212	Glands	12
Eyes	187	Ears	87
Nose	17	Throat	2,723
Lungs	0	Heart	11
Hearing	5	Miscellaneous	394
Hookworm	282		
Vision	1,689	Grand Total	5,665

Only children whose parents cannot pay for these corrections are eligible for help under this program. The almost 6,000 corrections performed in 1951 would, therefore, have gone uncorrected had the State Legislature not provided funds for the program. The funds are made available to communities on a matching basis — a dollar of State funds for every local dollar raised for this purpose.

With a larger Legislative appropriation, Mississippi would be able to assure every child in the state that lack of financial means will not necessitate his living with correctible physical defects that impair his health and retard his education. At the present time the appropriation is not adequate to provide for many children who need help, according to Dr. N. C. Knight, Medical Director of the School Health Service.

VOCATIONAL TRAINING SCHOOL SUGGESTED

Commenting on prevention of emotional disturbances in school children, Dr. Estelle Magiera, director of the Child Guidance Service, recently stated that vocational training could be the answer to many emotional problems among adolescents.

"Forcing the backward child to remain in competition with average children in the classroom is unfair to him, to the other children, and to the teacher," Dr. Magiera said. "A vocational training school for children who cannot compete with average students but who can be taught to work with their hands would ward off some of the feelings of inadequacy and inferiority the backward child often feels. These feelings of inferiority can be the beginning of a long, drawn-out emotional illness. If such a child's true abilities are recognized and developed, however, he can become a self-sufficient, self-directive citizen rather than a maladjusted, possibly institutionalized adult. Aside from the humane element involved, prevention of serious emotional problems is much more economical than waiting for an illness that may result in years of unproductive life in a state-supported institution.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Opthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood
Orthopedics—Thomas H. Blake, Jackson
Public Health—Felix J. Underwood, Jackson
Pediatrics—Harvey F. Garrison, Jackson
Radiology and Roentgenology—Karl O. Stingily, Meridian
V. A. Pathology—H. N. Naumann, Jackson
Surgery—W. H. Parsons, Vicksburg
Urology—Temple Ainsworth, Jackson

PEDIATRICS

THE PRESENT STATUS OF SULFONAMIDE THERAPY IN PEDIATRICS

Alfred E. Fischer
New York City, New York
New York State Journal of Medicine
51: 225-227, (January) 1951

The use of sulfanilamide and the early sulfonamides was frequently associated with untoward side reactions. In addition, there still exists a fear that kidney and liver damage or anemia may result if the drug is kept up too long, and also that frequent use may render the patient intolerant of the drug during some later and more serious illness. These objections, commonly held by the layman, interfere with the pediatricians' use of a drug which is safe, cheap and easily available. The latest sulfonamides (sulfadiazine, in particular) are much less toxic than the earlier forms. The daily dosage may vary from 1-1½ grains per pound, given in portions at four or six hour intervals. The sulfonamide should be continued for about four days to insure riddance of the more resistant organisms, unless there is no definite response in the first 36 or 48 hours. Prolonged therapy is indicated for infection of the sinuses, ears and lymph nodes. Large amounts of fluid are essential. Vomiting, if present, may not only interfere with adequate dosage, but also with the necessary fluid intake. Alkali should also be given although large amounts are required to produce a significant increase in the solubility of the drug in the urine. Urine examinations for crystalluria and microscopic and gross hematuria should be frequently done. A complete blood count is indicated when the drug is continued for four or more days or when unusual symptoms occur. Euphoria, restlessness, rash, and fever may occur.

Upper respiratory infections with the pyogenic cocci and **Hemophilus influenzae**, and urinary tract infection with **Escherichia coli** are the prime indications. Since it is not always possible to make the exact diagnosis in every acute febrile illness, one can be guided by the existence of other infection in the household, the classroom or the community, and even the time of year. Some resistant low-grade infections associated with a purulent discharge are also subject for sulfonamide therapy, e.g. sinusitis. The insoluble sulfonamides may be tried against intestinal infections.

When only one house visit seems feasible, sulfonamide therapy seems preferable to one dose of the long-acting penicillin preparations. Sulfadiazine is not only much cheaper than the newer antibiotics, and probably as effective in the ordinary respiratory infections, but it is more palatable. The effectiveness of sulfonamides in the prophylaxis of streptococcal and meningoccocal infections has been established.

COMMENT: The points brought out in this article should be considered very carefully by all of us. There is no doubt but what we are disposed to give more of the newer antibiotics, which incidentally are very expensive, when at the same time we could give a solution of sulfa or a combination of sulfa and penicillin which perhaps would be just as effective, since there are certain types of sore throats that respond better to the sulfa prescriptions than to penicillin. In many instances where we will give the more expensive antibiotics, we should give the sulfa prescription.

You have not fulfilled every duty, unless
you have fulfilled that of being pleasant.
—Charles Buxton

Woman's Auxiliary

FROM OUR NATIONAL PRESIDENT

Convention thoughts bring us to the convention agenda. The Board took action to allow a change in the order of our proceedings, if such a change is desirable. What constructive ideas have you to offer to help make our convention the kind of meeting no one wants to miss? Our convention belongs to our states. I want to plan it to concur with your wishes and suggestions. Will you kindly take time to send us an idea or two!

Perhaps the item on our convention agenda most neglected, yet most important, is resolutions — our positive actions to promote further growth and leadership.

Suggestions for program extension and enlargement, ideas which will reflect to the people of our countrf our purpose and position must come from you, our members. We solicit your thing now, as county groups — as state groups. Help us to make this convention your meeting and to enact your convictions. Let us hear from you now.

COAST COUNTIES AUXILIARY

A most delightful meeting of the Coast Counties Auxiliary was held January 8 at historic and charming Longfellow House near Pascagoula. Mrs. B. B. O'Mara of Biloxi, auxiliary president, presided at the session following a delectable luncheon. She presented Mrs George W. Owen, state president, and Mrs. Richard Clark, president-elect, honor guests of the meeting.

Mrs. Owen, as guest speaker, presented pertinent agenda which she is eager to see auxiliary members over the state report progress on in the weeks ahead. Most of these undertakings she discussed in a news-letter which follows.

State President's Newsletter

Now that the holidays are over, we are on the last part of our working year. I hope that you have had as interesting a year and as much pleasure in your association with one another in your smaller groups as I have had meeting with you and in my association with the Presidents of other States and National officers. I hope that when the year's reports are in, that we can be as proud of our accomplishments as I have been proud of our doctors' wives.

Plans are under way for a bigger and better state meeting. We are hoping to have good speakers and many interesting things are being planned for your entertainment. We want every president and officer to be here and to bring as many of her members as possible. We want each of you to save your handbook, Bulletin, and other material that you may have that may be useful to your successor. We hope to have notebooks for each president next year.

Now, for a few reminders of things we are doing:

Bulletins: Be sure to have at least one copy in your Auxiliary to carry over to the new officers.

Today's Health: "Our Public Relations." Not too late to have each member subscribe.

Essay Contest: It is well under way and entries are due in soon. Your interest and work on this project have been very gratifying and we hope we have many winners.

Nurse Scholarship: Remember to be on the lookout for deserving H. S. graduates and if your auxiliary can, help augment state funds to keep the scholarship perpetual.

Civil Defense: We have a new State Chairman, Mrs. George E. Riley, 615 Arrowhead, Jackson.

Histories: Have you written yours? The Historian would like to have one.

Councilors: Have you contacted any county or unit which you think should be organized? If you have had any expense in visiting your units, please send to Treasurer.

Be sure that every eligible doctor's wife in your community has been contacted for membership. Have all names and addresses checked and sent in to the President, President-elect and Secretary besides the report sent to the Treasurer. Only paid up members this year receive a yearbook next year.

Thank you for your wonderful help and cooperation this year. If I can be of any service for these remaining months, do not hesitate to call on me.

WHAT THE AUXILIARY CAN DO FOR CIVIL DEFENSE

Organize NOW through your local Civil Defense chairman. Take inventory and inform him concerning the number of doctors' wives who will work in the various fields, i.e. registered nurses, dietitians, stenographic workers and those trained in child care. There will be work for everyone of us. Among other things we will be called upon to assist in making surveys of existing stockpiles of essential materials in our local hospitals and drug stores. These stockpiles will include such materials as morphine, barbiturates, bandages, burn ointments, anti-biotics, etc. available in the event of an emergency.

HOME NURSING AND FIRST AID: It is imperative that every home have at least one person trained in home nursing and first aid. These courses are available through your local Red Cross, and that organization is eager to train any interested group. Let us be trained and ready ourselves and interest others in taking these courses. Handy 'pin-up' sheets, giving pictorial information on first aid are furnished as a public service by your telephone company in cooperation with the American Red Cross.

STUDY GROUPS: Auxiliary members are urged to organize study groups within their respective county auxiliaries which will afford every member the opportunity to learn how to protect herself and family in the event of an atomic attack, and enable her to speak before lay groups and assure them that their health and well-being is of prime importance to us, as doctors' wives, and that they will be cared for whether in war or peace.

The following publications are recommended for study groups: "HOW TO SURVIVE AN ATOMIC ATTACK" by Richard Gerstell, published by Bantam Press Inc., price 25 cents and available at most news stands—or at 25 W. 45th St., New York, N. Y., and "SURVIVAL UNDER ATOMIC ATTACK" and "WHAT YOU SHOULD KNOW ABOUT BIOLOGICAL WARFARE," both available through the Supt. of Documents, U. S. Gov't. Printing Office, Washington 25, D. C.—price ten cents each.

Be sure EVERYONE knows the "Six Survival Secrets For Atomic Attack":

1. Try to get shielded
2. Drop flat on the ground or floor
3. Bury your face in your arms
4. Don't rush outside right after a bombing
5. Don't take chances with food or water in open containers
6. Don't start rumors

None of us knows when or if enemy bombs will fall in our community—or when some other disaster will suddenly strike. But it is best to be prepared—to know beforehand what to do if someone in your family or a neighbor should be injured.

MID-SOUTH ELECTS

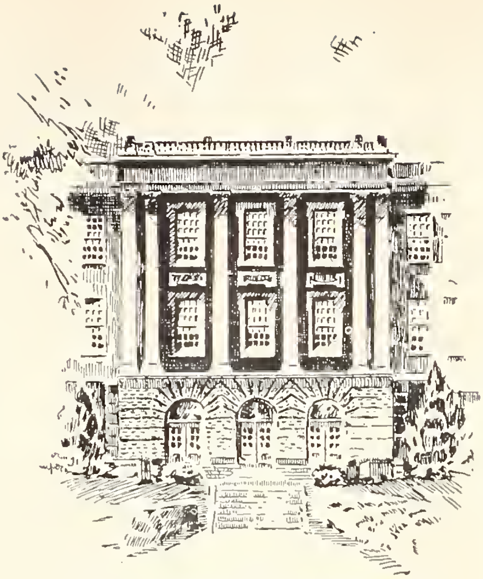
(Continued from page 259)

The Mid-South Postgraduate Medical Assembly in February was an outstanding meeting. The attendance was off just a bit but still it was good. The thirty-minute papers seem to be popular. The fellowship was fine. The Past Presidents Club was quite well attended, with Drs. John Archer and Julian Price serving as hosts at a very sumptuous banquet. Dr. Hyman, dean of the Tennessee Medical School, was a special guest. He made a provocative and a most informative talk. Dr. R. B. Robins, of Camden, Ark., was the guest speaker. An eloquent speaker, his fire was more impressive by the interesting information that he brought in the field of medicine. He showed the bad effects of regimentation in medicine and explained how we may keep medicine as it is. He made a plea for good citizenship on the part of every doctor.

Dr. John Archer of Greenville presided over the meeting as president with dignity and efficiency. Dr. H. T. Smith of McGehee, Ark, is the incoming president. A man of fine ability and wide influence, he will prove an asset to the association. Dr. L. S. Nease is president-elect from Newport, Tenn. A loyal member of the association for many years, he possesses a fine medical spirit and will be very popular as president.

SINCE WE HAVE ANTIBIOTICS

The antibiotics of recent years have done much to prevent surgery. Thirty years ago a very large percentage of pelvic surgery in women was caused by gonorrhea. Syphilis was a cause of aneurysm. Empyema called for many operations following pneumonia. Otitis media was so common that many doctors carried the lancet with them for this purpose. Mastoids often followed calling for a major operation. Osteomyelitis was seen almost every week in a general practice. It called for surgery. These major ills of a decade ago are now cured by our operations being prevented. In addition, they are saving many lives when serious operations are done. For several years we have not had to puncture an ear drum when patient was seen early and plenty of penicillin and sulfa were given. We are now wondering if many abscessing teeth can not be prevented by the same measure. Some cases apparently have responded quite well. The prevention of abscessed teeth would mean much in the social and economical life of our people.



BLUE MOUNTAIN COLLEGE
Blue Mountain, Miss.

IN THE LAST QUARTER of a century the status of women has greatly changed. Only a short time ago there were few women outside the home. Today women have entered almost every profession and business. However, this "great emancipation" of women has not changed or lessened the demand for the graces and abilities of Christian womanhood. In fact, there is greater demand than ever before that young women who enter the business world possess the qualities that can best be developed or acquired on a college campus whose aim and ideal is the training of young women in Christian living.

There are many advantages, some tangible, some intangible, offered by our small denominational woman's colleges.

Young women of college age are still in the formative period of their lives. While they are away from parents and home, their teachers exert a great and lasting influence on them. The faculty and staff of Christian woman's colleges are men and women of sterling Christian character who are well trained in their particular fields. They are able to give individual attention to the needs and problems of each student.

Because the student body is small the students have the privilege of knowing everyone and forming many friendships. Practically all of the students are girls whom any mother and father would happily choose as their daughters' friends. The friendly, happy spirit of the students and faculty is an outstanding characteristic of small Christian woman's colleges.

There is another notable advantage of the small girls' school. Every student is encouraged in individual development through the many organizations and campus activities. This is not always true in coeducational schools. No doubt the numerous and varied opportunities for leadership in our Christian woman's colleges account for the fact that their alumnae are almost always the civic, religious, and social leaders of their communities.

These schools almost always achieve high scholastic standing. The Fine Arts Departments are always excellent and offer the very best in cultural development and appreciation for the finer things in life.

Through a well planned program of social activities the students in the small Christian woman's college participate in and enjoy Christian recreation of the highest type.

Alumnae of our Christian woman's colleges have in the past and will always lead in the establishing of Christian homes, the very foundation of a stable society.

The most outstanding advantage offered by the Christian woman's college is not easily describable or definable. It is the Christian atmosphere which is always felt on these campuses. This institution has as its motto: "That our daughters may be cornerstones polished after the similitude of a palace." One of the greatest needs of our modern world is that our young women may be strong and intelligent and fashioned in the beauty and spirit of Christian living. **The Christian woman's college** is the answer.

Etiology and Treatment of Spontaneous Abortion*

Edward C. Hughes, M.D.†
Syracuse, New York

Spontaneous abortion, which is the termination of pregnancy anytime before the fetus has attained a viable size within the uterus, accounts for many human lives each year. Although spontaneous abortion is thought to occur frequently, probably terminating more lives than gynecologic malignancies or the hazards of childbirth combined, the actual loss of life by this means is rather difficult to accurately determine. Some reports have suggested that at least 20 per cent of all pregnancies terminate before the child becomes viable. If we take into consideration the number of abortions that occur before the twentieth week and those that happen before the twenty-eighth week of viability of the child, it is perhaps correct to assume that this percentage is correct. Hertig has summarized the observations of five American authors and concluded that this combined experience showed an average incidence of 9.8 per cent of spontaneous abortion prior to the twentieth week of gestation. In New York City, where all instances of pregnancy are supposedly reportable, a five-year study, from 1944 until 1948 inclusive, recorded that there were 708,045 pregnancies reported by the health department and that 7 per cent terminated before the twentieth week of gestation. Baumgardner of that city, however, has stated recently that it seems reasonable to estimate that at the present time approximately 10 per cent of all conceptions terminate in spontaneous abortion.

There are certain basic factors which are involved in individuals who have given the history of abortions and similar accidents of pregnancy. We have noted, and it has been observed by others, that individuals giving the history of sterility are more prone to abortion, and that premature labor and congenital anomalies are more apt to be found in this type of individual. We have statistical evidence in a survey made in our community that if an individual has an abnormal pregnancy, such as a spontaneous abortion, or premature labor in the first gestation, that she has a greater opportunity of repetition of a similar event in subsequent gestations. Therefore, we advocate immediate study of all couples who give the history of one of these complications in their first gestation.

There are many factors involved which cause spontaneous abortion, depending upon the stage of pregnancy. For this reason, we consider early abortion as occurring before the twentieth week of pregnancy and the fetus weighing less than 400 gm. Late abortion develops between the twentieth and twenty-eighth week of gestation and the fetus weighing between 400 and 100 gm. The cause of abortion at these various periods of pregnancy is generally upon a different etiological basis.

The spontaneous expulsion of the products in early abortion is generally preceded by the death of the fetus, and the etiology of abortion at this time resolves itself into determining the cause of the fetal death. It is only natural to suspect that poor germ plasm such as faulty ova or sperms is the primary factor involved in ovular death at this time. Hertig has found abnormal ova of 48.9 per cent of 1000 abortions which he studied. He also has noted that in many of these cases that the embryo had only partially developed or was not found at all. However, it is difficult in many situations to place the blame entirely upon these two cells because there may also exist abnormal environmental conditions or failure of the endometrium, which itself may deprive the ovum of its nourishment and cause its death early in the gestation. Therefore, we must consider the preparation of the endometrium, the physiology involved in the implantation of the blastocyst, together with the hormonal relationships which are necessary to further this process as one of the most important and significant physiological events which influences the growth and survival of the embryo. Failure of this process may not only be associated with the faulty germ plasm, and assist in early ovular death, but also affects placental formation and may be causative of late abortion. There are apparently certain objectives which are involved in the process of implantation. These are as follows:

1. The endometrium must become the de-

---

* Read before the sixty-third annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 12-15, 1952.

† From the State University of New York Medical Center at Syracuse, New York, Department of Obstetrics.

cidua and continue to secrete adequate amounts of material for the growth of the embryo.

2. The early chorion and later the placenta must be adequately developed in order to synthesize the food stuffs and transmit this to the fetus.
3. These processes must be stimulated by the ovarian steroids in order to carry on this process.

These relationships decide fetal development and growth, and abnormal patterns and function in any one of these integral parts of the process generally affects the other and disturbs ovular survival. It would seem quite necessary then at this time to discuss some of the endometrial changes which take place during normal and abnormal implantation and describe their effect upon causing abortion.

Before conception, the pituitary and ovarian glands are concerned mainly with establishment of the menstrual cycle. This includes the process of maturation of the graafian follicle, ovulation, corpus luteum formation, and the preparation of the endometrium for implantation. This integrated phenomenon occurs monthly in the normal woman from puberty to the menopause. The pituitary gonadotropin, namely follicle stimulating hormone, and luteinizing hormones affect the ovaries causing them to produce an ovum and also to secrete the ovarian steroids. These steroids, estrogen and progesterone, cause the endometrium to become a highly secretory type of tissue. The changes, which take place in the endometrium after ovulation, have occurred in anticipation of the fertilized ovum and are truly remarkable. First, there is a marked increase in the blood supply and the spiral arterioles become hypertrophied, elongated and there is an increase in the blood flow through these vessels. Secondly, the endometrial glands grow rather slowly during the preovulatory time, but under the influence of progesterone, they become enlarged and highly secretory, secreting and producing large quantities of food, particularly glucose. The metabolism of glucose, as it is carried out in these glands, is a remarkable process, and although little time will be spent in discussion of these chemical processes that go on in these glands during the conversion of glucose to glycogen and back to glucose again, I would like to emphasize that there are many substances together with glucose that are produced in these glands and made available for the blastocyst as it implants itself into the endometrium soon after fertilization. I would like to emphasize that the endometrium must be highly secretory, not only for the growth of the embryo, but also for the growth and development of the outer layer of the trophoblast or the chorion. In some individuals, the endometrium fails for various reasons to proceed to this secretory condition and there is a deficiency of glucose, vitamins and other essential food stuffs. After implantation of the blastocyst, this deficiency causes retarded growth of the chorion which affects eventually the fetal body itself. Such an occurrence is due truly to lack of proper nutrition.

After conception, an entirely new picture arises and other hormones are called into play so that the ovary and endometrium, which has now become decidua, can continue their relationship. It can be said that the blastocyst with its embryo assumes the responsibility of stimulating the corpus luteum to continue to put out estrogen and progesterone so that these steroids can affect the decidua to secrete more and more nutritive materials. Therefore, the early chorion and later the placenta serves as an intermediate endocrine structure, the placenta producing hormones throughout the remaining portion of gestation. During the early portion of pregnancy before the 120th day of gestation, the Langhan's cells or the cytotrophoblast or the cells which line the inner aspect of the chorionic villi, produce a hormone called chorionic gonadotropin. This hormone has a specific luteotrophic effect upon the corpus luteum and the ovary so that it continues to produce added amounts of estrogen and progesterone. We speak of this time of pregnancy as the ovarian phase of gestation. The effect of estrogen and progesterone is to vascularize the decidua and to stimulate it to produce sufficient amounts of food, particularly glucose so that the nourishment of the early blastocyst may be assured. After the 120th day, the Langhan's cells disappear and the syncytial cells or the outer lining cells covering each tiny chorionic villus take over the function of producing the steroids estrogen and progesterone in increasing amounts. These two steroids continue to have the same effect upon the decidua as previously designated. The amount of chorionic gonadotropin increases rapidly from the 40th to the 90th day of gestation and then wanes rapidly so that after the end of the 120th day, it is only found in small amounts throughout the remaining portion of the gestation. From the hormonal standpoint, it is important in the early portion of pregnancy to have the cells of the chorion, particularly Langhan's cells, to be actively growing and producing enough chorionic gonadotropin to stimulate the corpus luteum to added function. If the decidua is not producing adequate amounts of glucose, the Langhan's cells do not proliferate properly, and the amount of chorionic gonadotropin falls short of what is necessary to stimulate the corpus luteum. Such diminished function can be noted by determining the quantitative amount of chorionic gonadotropin that is secreted by these cells. In the normal individual with normal endometrium, the amount of chorionic gonadotropin varies from 10,000 ovarian hyperemia units to 60,000 ovarian hyperemia units depending upon the growth of the chorion. In 75 cases of spontaneous abortion in whom the chorionic gonadotropin level was studied weekly during the first trimester, the average level of output of this material was 10,000 units or less. Also the effect of this hormone can be noted upon the secretion of pregnandiol in the urine, which is the excretory product of progesterone which has been put out until this time by the corpus luteum. In normal individuals the amount of pregnandiol varies from 5 mg. per 24-hours to 25 mg. per 24-hours, whereas in the 75 patients with spontaneous abortion, the pregnandiol in the urine was considerably less.

Pathological study of the abortuses in these 75 cases described above showed that there were definite pathological lesions which could explain the low levels of the output of this hormone, chorionic gonadotrophin. There appeared to be a degenerative change in the Langhan's cells, and in some abortuses these cells were totally missing in numbers. Also there occurred an edematous condition of the chorionic villi resembling a hydrops. The stroma of the villi showed lack of the vascular elements and generally was filled with a moderate amount of fluid. These pathological findings were particularly found when the endometrium was poor in quality and the chorion had not grown adequately. It was particularly important to note the lack of blood vessels in these structures because the absence of the vessels diminished the amount of blood passing into the embryo causing early fetal death from lack of nutrition. It can be said then that the relationship of the endometrium or the decidua to the growing chorion is very important, and failure of this membrane to produce adequate amounts of nourishment which is necessary for the growth of these chorionic cells may be a direct cause of intrauterine death and abortion. It also can be stated that such early deficiencies probably affect the growth and development of the placenta which would tend to account for some of the pathology which is found in the placenta later in gestation. These changes might be the basis for late abortion. Although disturbance in these relationships is probably the most frequent cause of abortion, there are many systematic diseases, as well as local pathological changes in the pelvic organs which also have their effect upon these processes.

SYSTEMIC EFFECTS

Although there are a few general systemic conditions which actively cause abortion, most of these conditions affect the genital organs themselves by creating abnormal decidua reactions, and retarded placental-fetal development. We do not believe that serologic incompatibility is a factor causation of early abortion, but it is important to remember that an Rh negative mother may become sensitized by even aborted pregnancy to a degree that will endanger the outcome of future childbearing. It is also a fact now that even with the advent of active antisyphilitic therapy, that syphilis may play an important part in creating not early abortion, but particularly affecting placental development so that late abortion may occur. Some nutritional deficiencies such as lack of vitamin C, A, and also low protein intakes, may not only affect the process of ovulation, but also affect the quality of sperm or ovum and later the growing embryo. It is remarkable that in the allergic sensitized generation in which we live, that such factors seem to play such little part in the etiology of abortion. There also has been considerable discussion about emotional and nervous tensions as creating a profound effect upon fertility and abortion. However, we are inclined to feel that these causes have been over-emphasized and play little effect upon the actual creating of a spontaneous abortion. As a rule, to be convinced, one need only to witness the childless couple, both realize offspring in second marriages, or to see the childless couple become fertile after adopting a child. Other general effects such as diabetes mellitus, chronic nephritis, and blood dyscrasias may create effects which alter decidual-placental relationships.

PELVIC PATHOLOGY

There are certain pathological conditions of the genital organs which may affect ovular growth and development and thereby result in fetal death and expulsion. Lesions of the cervix, although probably previously overemphasized, must be still recognized as having some importance. Many would agree that chronic cervicitis, secreting a thick tenacious secretion, might interfere with conception, but probably would only play a minor part in causing abortion. However, the widely patulous cervix may indicate an incompetent internal os. Lash has advocated cervical repair in this type of case to compensate for this condition.

Neoplasms are rather frequently found in the pelvic organs and therefore may complicate pregnancy. Although fibroids are associated with infertility, they generally do not prevent conception, nor do they hinder pregnancy from progressing to term and spontaneous delivery of a normal child. Nevertheless, these tumors may disturb the placenta site and increase the incident of abortion. Ovarian tumors should also be considered in the same category as fibroids, and their removal is only indicated when they complicate the process of labor itself. Ovarian tumors, unless presenting an emergency, offer no problem. Corpus luteum cysts and tumors involving the same ovary as the corpus luteum should not be removed until after the 140th day of gestation. It is only a rare occasion that these tumors must be removed.

Uterine displacement should be considered innocent unless circumstances suggest their guilt. When we find a retroverted uterus in a patient who has previously aborted and is anxious to conceive again, we believe it is good practice to replace the uterus by means of a pessary and maintain it there in the anterior position from the time of conception until the pregnant fundus becomes too large to fall back into the cul de sac.

Pathology of the Fallopian tubes is not often considered as being a causative factor in spontaneous abortion. Endometriosis, chronic salpingitis, are usually an important factor in relation to sterility itself, but when the tubal pathology does not actually occlude the tube, cause fixation of the fimbria or decrease the ciliary activity and thereby materially prolong the time it takes for a fertilized ovum to reach the endometrium, the tubes play little part in the condition of abortion.

Congenital malformations of the uterus itself, although difficult to recognize many times, may be incompatible with conception and gestation. In some instances the so-called "infantile uterus," the one which does not enlarge readily after conception, may contract very actively as the conceptus grows and causes expulsion of these products. However, to recognize this type of uterus, it is rather important because it generally reflects the hypogonadal status of the patient herself, and abortion after a period of sterility is not surprising. Other malformations of the uterus, such as the bicornate uterus, or the unicornus uterus may expel its contents before viability, but also may carry on to term without difficulty. It is evident then that various pathological conditions of the genital organs themselves play some part in the causation of abortion.

In summing up the etiological factors associated either with early or late abortion, it can be said that—

1. Faulty ova, sperm or both may cause a poor development of the embryo itself and result in early fetal death and early abortion.
2. The environmental deficiencies may also cause early fetal anomaly or death and even abortion, but are more prone to cause abortion in later pregnancy.

Lack of adequate nutritive materials from the endometrium may first cause abnormality in the fetal body itself, but secondly, it is more apt to produce irregularities in the developing chorion so that it is unable to secrete adequate amounts of chorionic gonadotropin so that the decidua cannot be maintained by estrogen and progesterone from the corpus luteum itself. It would seem that these hormonological and endometrial changes are perhaps the most important in deciding the growth of the chorion and the development of the placenta, and consequently the formation and growth of the embryo and fetus. Although these relationships are fundamental, these other complications together with the local pathological factors also affect these processes.

SYMPTOMS AND SIGNS

If one appreciates the factors involved in the basic physiology of implantation of the ovum, one can realize that failure in this process may create changes in the decidua or the chorion which cause separation of the chorion from the uterine wall. This separation will create the basic signs and symptoms of abortion, namely, vaginal bleeding and uterine pain. The vaginal bleeding may first be only spotting, or it may start out with a profuse amount of bright red blood. The pain is particularly typical because it is intermittent in character and has to do with the contractions of the uterus which is attempting to stop the bleeding. Unfortunately, other conditions associated with pregnancy may give similar symptoms and signs and one must make a definite diagnosis before advancing a specific type of treatment.

DIFFERENTIAL DIAGNOSIS

When a patient presents the symptoms and signs of hemorrhage and pain in the early months of pregnancy, there are several things that must be considered:

1. Cervical Lesions
    a. erosions
    b. polyps
    c. carcinoma
2. Extrauterine Causes
    a. ruptured corpus luteum
    b. ectopic pregnancy
3. Intrauterine Causes
    a. abortion
    b. hydatidiform mole

Bleeding from cervical lesions may occur at any time during the gestation, but generally occurs after contact and may be little in amount or may be quite profuse. As a rule, the bleeding is rather scanty and is mixed with vaginal discharge.

Bleeding from extrauterine causes such as corpus luteum rupture, or ectopic pregnancy, generally can be characterized by spotting or it may be considerable in amount. In case of the ruptured corpus luteum cyst, there may be no bleeding at all, rupture of the cyst generally occurring before a menstrual period is missed. However, this condition must not be overlooked as serious results can occur if failure of diagnosis occurs. Bleeding from ectopic pregnancy, however, is spotty in character and occurs shortly after the missing of the first menstrual period and may increase later in pregnancy, if the condition is not diagnosed. However, the amount of bleeding generally is not profuse.

Associated with the vaginal bleeding, there are generally varying degrees of lower abdominal pain. If the bleeding is the result of cervical pathology, as a rule there exists no pain. However, extrauterine pathology, either due to the ectopic or the ruptured corpus luteum cyst, causes considerable pain. This pain is colicky, diffuse, or may be localized to one side and also may be associated with some uterine contractions and backache. Rupture of the corpus luteum occurs very spontaneously; it may occur after trauma or intercourse. After rupture of the corpus luteum, considerable blood is put forth into the peritoneal cavity and the patient experiences a very severe generalized pain throughout the abdomen, particularly in the lower portion of the abdomen. There is always associated with it, varying degrees of shock. In the case of intrauterine pathology, the pain is generally intermittent in character and characterized by cramps. These cramps or abdominal pain increase as the products of conception separate from the uterus and as they are being extruded into the cervical canal. If the pregnancy has proceeded from the 20th to the 28th week, the fetal body itself is much larger in size. The cervix must dilate further to allow passage of the fetus which generally weighs from 400 to 1000 gm. Therefore, the pains will simulate a miniature labor. The placenta follows after the birth of the fetus. In many instances, the placenta in these late abortions will not follow immediately, but may be retained within the uterus for some hours or even days.

OTHER SYMPTOMS AND SIGNS

There are other symptoms and signs which are associated with these conditions which are as follows:

1. Rectal and Bladder Tenesmus
2. Shock
3. Passage of blood clots or portions of the products of conception.

If the pathological lesion is entirely cervical, there exists none of these other signs and symptoms. With extrauterine conditions, however, there may exist some bladder and rectal tenesmus with frequent bowel movements and diarrhea. If the extrauterine or ectopic pregnancy has ruptured through the tube, or been aborted through the end of the tube, there are varying degrees of shock, depending upon the amount of bleeding into the abdominal cavity. In these conditions, the shock is always out of proportion to the amount of vaginal bleeding. Occasionally, the individual will pass a decidual cast of the uterus which is grayish-red in color, and if studied under a microscope, will fail to show chorionic villi. The decidual cast may show secretory endometrium with the decidual reaction, or in some instances may even be proliferative in character, but there are never any chorionic villi found in this specimen. In connection with the intrauterine causes such as abortion, there may be frequency of urination, but very little bladder or rectal tenesmus. However, if the fetus again is from the 20th to the 28th week and causes dilatation of the cervix, the patient may experience some pressure upon the rectum and upon the bladder as the fetal head passes through the cervix into the vagina. The amount of vaginal bleeding generally is in proportion to the shock. There may be also passage of blood clots, embryo, or portions of the placenta. In the early abortions, generally the embryo is never noted and the patient may pass a small unoccupied sac with edematous-appearing villi on the external surface. If the condition is due to the hydatidiform mole, the characteristic grape-like bodies representing the cystic degeneration of the chorion will be noted.

DIAGNOSIS

An accurate diagnosis must be made in order to properly treat the existing condition. This cannot be made unless a complete abdominal examination together with a sterile pelvic examination is made. There was a time when pelvic examinations were withheld fearing the possibility of infection. However, with the use of antibiotics, they are perfectly safe, and justifiable. The patient must be examined under sterile conditions in order to make a positive diagnosis.

The purpose of the sterile pelvic examination is to determine the following conditions:

1. Specular examination, by inserting a bivalve speculum into the vagina will reveal the condition of the cervix.

Cervical erosions, polyps, and carcinoma can be determined. If there is any question about the character of the lesion of the cervix, a biopsy should be taken and the specimen sent to the laboratory for further diagnosis. Also by specular examination the character of the cervix as to dilatation can be noted. If there is dilatation and effacement of the cervix, it is readily understood that intrauterine contents are being expelled into the lower segment of the uterus or the cervix and that the abortion has become inevitable. If the cervix, however, is closed, then it can be felt that the abortion may be threatening and that there may be a possibility to continue further into the gestation. After these conditions have been thoroughly studied, then the bimanual palpation of the uterus is made. This is done under sterile technic and the uterus is palpated for size, softness, whether it is contracting under the finger, whether the cervix is dilating, or whether the lower segment is becoming ballooned out or distended. We speak of this sign as Tarnier's sign. If the uterus is symmetrically enlarged, soft, the pregnancy is intrauterine in location. If the uterus is small with a homogeneous mass adjacent to the uterus, one must suspect an extrauterine pregnancy. In the extrauterine pregnancy, the mass is palpated alongside the uterus. The uterus is smaller and very tender on motion. Many times there is a groove that can be palpated between the mass and the uterus and blood or a hematocle can be palpated in the cul de sac. If the uterus is retroflexed and retroverted, the diagnosis between these two conditions is made more difficult. If necessary, the patient should be given a general anesthesia to make a positive diagnosis of the location of the pregnancy.

LABORATORY WORK

Certain laboratory tests should be made to rule out the possibility of intrauterine, extrauterine infection, to determine the condition of the patient herself, the blood loss and also to know whether or not the ovum is alive. Therefore the following laboratory tests should be made.

1. Complete blood count with hematocrit would give the condition of the patient as to loss of blood and also the possibility of infection.
2. Sedimentation time is absolutely essential because in cases of infected abortion, a fast rate is noted. It is generally advisable to cross-match the blood so that blood may be made available and may be given if the amount of blood loss is appreciable.
3. Quantitative determination of chorionic gonadotropin and pregnandiol excretion per 24-hours generally will differentiate between an alive or dead embryo.

TREATMENT

If the differential diagnosis is complete, and a positive diagnosis of intrauterine pregnancy is confirmed, the treatment of this condition is then instituted. To carry out this treatment specifically, one must then further differentiate between the following various types of abortion.

1. The ovum which is threatening to abort or is inevitable.
2. The blighted ovum which has a missing or undeveloped embryo.
3. Missed abortion—where the ovum has

died in utero, but has been retained.
4. Hydatidiform mole.

The first type of abortion can be clarified by the sterile pelvic examination. If a portion of the placenta, rupture of the amniotic sac, or the fetus is presenting at the cervical os or has been expelled, attempts at conservative treatment of the condition by the use of hormones or other drugs is of no avail. Treatment for this type of abortion is to empty the uterus. Generally the interior of the uterus is explored by the finger and a finger curettage is performed. This may be followed by a sharp curettage. However, this statement should be qualifeid by the fact that in the face of intrauterine infection, as denoted by a fast sedimentation rate, leukocytosis, and fever, the procedure of emptying the uterus should be postponed until active antibiotic treatment is instituted, according to the organisms which are found in the intrauterine culture. The danger of perforation of the uterus still remains a dangerous occurrence. Of course, bleeding takes precedent over all conditions and demands removal of the contents immediately. This, of course, should be preceded and followed by replacement blood transfusions.

If the abortion is only threatened, as noted by—

1. Cervix is closed and the lower uterine segment is not ballooned out.
2. Failure of passage of any portion of the ovum.
3. Moderate amount of vaginal bleeding and pain.

This type may be benefited by hormonal treatment. However, to be absolutely sure that treatment will be beneficial, quantitative determinations of the excretion of chorionic gonadotrophin and pregnandiol are helpful. If the excretion of these materials is below the normal, the chances are rather definite that ovular death is imminent. Hormonal treatment in this type of problem has no benefit and is expensive to the patient. On the other hand, if there is a moderately low titer of these hormones, hormonal treatment is indicated. If the titers are perfectly normal in the face of vaginal bleeding, hormonal treatment is generally unnecessary. The condition of the ovum can also be determined by the use of vaginal smears. Randal has reported this work.

HORMONAL TREATMENT

There can be three types of hormonal treatment instituted in the case of threatened abortion.

1. 500 to 1000 units of chorionic gonadotropin can be given by hypodermic daily until the completion of the placenta — generally some time between the 100th and 120th day of gestation.

This type of treatment will stimulate the corpus luteum of the ovary to increase in activity and secrete more progesterone and estrogen which is needed for decidual maintenance. If the addition of this material does not cause an increase in the amount of excretion of chorionic gonadotropin, and pregnandiol, a satisfactory effect as far as saving the gestation is not going to take place and treatment should be stopped and spontaneous abortion will generally follow. However, if a rise in the titers of these two hormones is noted after treatment, the prognosis of saving the pregnancy can be considered to be fairly good. We have had the best results in the above type of case when chorionic gonadotropin was used.

2. Progesterone from 50 to 75 mg. per day can be given to the patient to substitute for the failing corpus luteum.

This material causes stimulation of the decidua and causes the musculature of the uterus to become more relaxed.

3. A third type of treatment is the combined use of estrogen and progesterone. As much as 100 mg. of estrogen and 50 mg. of progesterone per day are advised by some authors. This should be carried out until placental formation is complete. The effect of this treatment is again upon the decidua, and as reported by many has proved to be effective.

In some instances it is perhaps advisable to continue the medication through the remaining portion of pregnancy. It can be noted that if the ovum has died in utero during this treatment, that retention of these products may occur. In this case, the uterus fails to grow, the patient loses weight and eventually spontaneous abortion will occur. Repeat estimations of the excretion of chorionic gonadotropin and pregnandiol should be obtained and should give leads as to whether or not hormonal treatment has been affected.

Rest and opiates also seem to play a very important role in the treatment of these conditions and should be used as indicated.

When a missed abortion has occurred and the embryo has died in utero and has been retained, the excretion of hormones will decrease in quantity. All therapy should cease when this occurs and unless hemorrhage forces the hand, the conservative approach to the problem will yield the best result. Occasionally a dilatation and curettage will be indicated.

It is necessary in all cases to replace blood which has been lost. It is very essential to treat all infected abortions conservatively using the specific antibiotic necessary for the organism which is to be found in the culture of the intrauterine cavity. Curetting should be postponed unless hemorrhage forces the hand until the infection is under control as shown by a normal sedimentation time and sterile culture. It is also a good plan to empty the uterus completely by curettage in all cases of abortion, at the proper time. It is also worthy of thought that some abortions may have malignant tendencies and may in the future develop chorioepithelioma. It is, therefore, important that all abortuses be sent to the laboratory for pathological study and particular attention should be paid to the curettings of the decidua. In cases of chronic abortion, the patient should be treated before pregnancy by using .1 mg. of Diethylstilbestrol for 12 nights following the cessation of menses, or by using the combined method of therapy, namely Diesthylstilbestrol .1 mg. for 12 nights following cessation of menses and progesterone 25 mg. for 6 nights following the Diethystilbestrol therapy.

SUMMARY

The etiology of spontaneous abortion generally involves the germ plasms and conditions affecting the environment or the endometrium. General bodily health, heredity, satisfactory nutritional status, normal hormonal relationships, together with local conditions of the uterus and endometrium which favor early growth of the trophoblast, are the factors which prevent both early and late abortion.

Middle Lobe Syndrome*

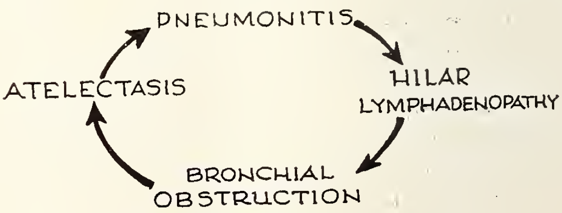
J. Harvey Johnston, Jr. M.D.
Jackson, Mississippi

CHRONIC OBSTRUCTIVE pneumonitis limited to the middle lobe of the right lung is being found with increasing frequency since the report of Graham, Burford, and Mayer in 1948. The increasing frequency of this syndrome has been attributed to the use of antibiotics in attenuating otherwise lethal pulmonary infections; it may represent a sequela to "virus pneumonitis." Unquestionably the increase in frequency is related to more adequate diagnostic investigations.

Although chronic atelectasis, or obstructive pneumonitis, of non-tuberculous origin may occur in any part of the lung, it is found much more frequently in the middle lobe. This no doubt, is due to the peculiar anatomic location of the middle lobe bronchus at the cross-roads of the lymphatic pathways from both the right upper and lower lobes. It is thus peculiarly vulnerable to extrinsic compression by enlarged hilar nodes.

Pathology: Essentially the pathology is that of bronchial obstruction with resultant atelectasis, chronic pneumonitis and fibrosis. Large indurated nodes producing bronchial compression are found in approximately eighty per cent of cases. Occasionally the lymph nodes are calcified and may erode through the bronchial wall producing broncholiths. Less often the obstruction of the middle lobe bronchus is due to edema and inflammatory reaction of the bronchial wall. Occlusion of the bronchus by foreign body or small tumor may occur. As would be expected in chronic bronchial obstruction, varying degrees of bronchiectasis are frequently found. It should be emphasized that a peculiar vicious cycle is established as a result of chronic infection in the middle lobe. Due to this infection, the hilar nodes become enlarged and indurated producing or furthering bronchial obstruction which results in atelectasis and further infection. (Fig. 1)

VICIOUS CYCLE OF CONTINUED INFECTION IN MIDDLE LOBE SYNDROME



Clinical Picture: The sympomatology is essentially that of any chronic, suppurative pulmonary disease. There is usually a story of chronic cough, hemoptysis, recurrent episodes of pulmonary infection, chest pain and low grade fever. Cough is often worse in the dorsal position; the pain characteristically is more marked in the right chest anteriorly. Not infrequently, there is a history of "wheeze," easy fatigubility and weight loss. Apparently no age is exempt, nor is there a significant sex distribution.

---

* Presented at Staff Meeting, Mississippi Baptist Hospital, January 15, 1952.

Diagnosis: A careful history will suggest the possibility of chronic pulmonary suppurative disease. The following diagnostic procedures are invaluable in establishing a diagnosis:

1. Roentgenograms

As the area of atelectasis in middle lobe syndrome may not be visible on the usual posterior-anterior exposure, (Fig. 2) it is essential that a right lateral projection be made. All too often one dismisses the chronic cough, hemoptysis, chest pain, etc. as being due to bronchitis, when the conventional posterior-anterior chest film reveals nothing of particular importance. **Only by obtaining appropriate lateral roentgenograms will one avoid overlooking middle lobe disease.** (Fig. 3) By use of PA and lateral chest films alone, diagnosis of middle lobe syndrome is possible in approximately three out of every four patients.

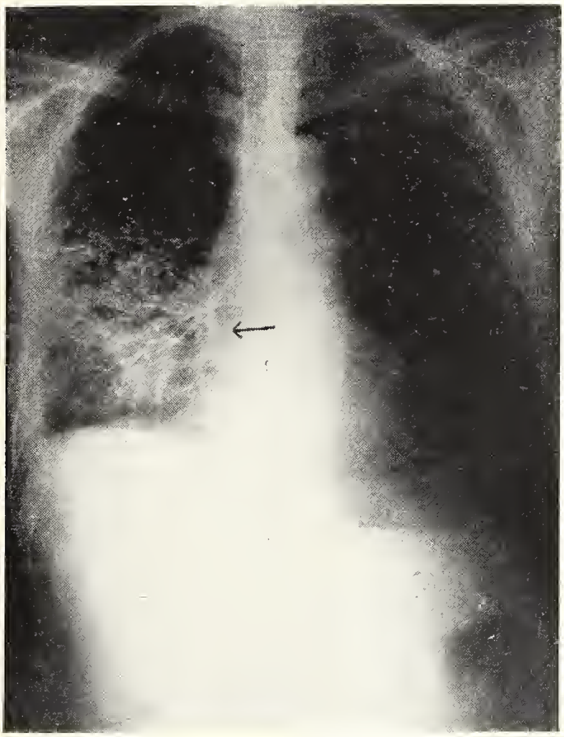


Fig. 2. Bronchogram with routine posterior-anterior exposure showing how the middle lobe can be completely masked by the right border of the heart.

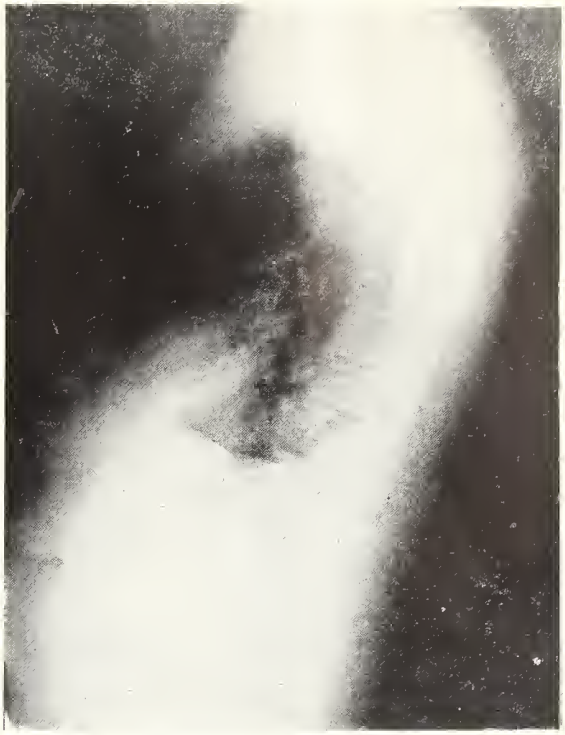


Fig. 3. Right lateral exposure easily showing atelectatic middle lobe.

2. Bronchography

Careful bronchography will usually reveal one of the following abnormalities in middle lobe syndrome:

a. Complete obstruction of the middle lobe bronchus.
b. Incomplete filling of one of the segments of the middle lobe. (Fig. 4)
c. Bronchiectasis
d. Close grouping of the bronchi indicative of atelectasis.

3. Bronchoscopy

Bronchoscopic examination is essential in differential diagnosis. Although it may be entirely negative, one usually finds edema, hyperemia and induration of the mucosa in the middle lobe bronchus. Purulent material is often found extruding from this bronchial orifice. It is not uncommon to note marked narrowing of the orifice reducing it to a slit-like opening.

Treatment: The treatment is surgical, extirpation of the middle lobe. Middle lobectomy is curative in that it removes the offending part and breaks up the vicious cycle of continued infection. As it is often impossible to distinguish clinically between middle lobe syndrome of inflammatory origin and middle lobe atelectasis

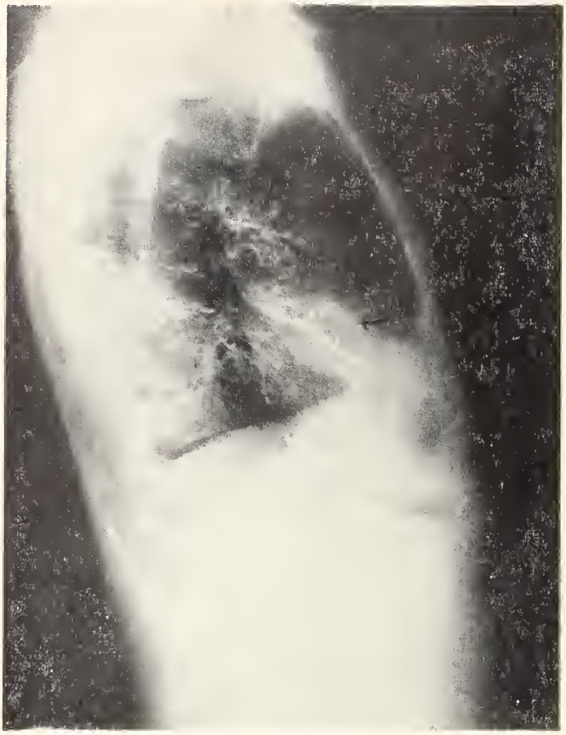


Fig. 4. Right lateral bronchogram showing incomplete bronchial filling with minimal bronchiectasis in atelectatic middle lobe.

secondary to bronchogenic carcinoma, exploratory thoracotomy with removal of the middle lobe is the safest therapy. Certainly this is imperative in older patients, particularly males, who so frequently present bronchogenic carcinoma. Facilities for immediate frozen section diagnosis should be available so that one may proceed with pneumonectomy if the excised middle lobe shows malignant disease.

CONCLUSION: The diagnosis of middle lobe syndrome is not difficult if one is aware of its possibility and insists upon thorough investigation including lateral roentgenograms of those with "chronic bronchitis," recurrent episodes of pulmonary infection, cough, hemoptysis, etc.

Surgical therapy is unquestionably the one of choice as it is the only way of definitely excluding bronchogenic carcinoma and as it effects clinical cure by removing the site of chronic suppurative disease.

BIBLIOGRAPHY

1— Graham, E. A., Burford, T. H., and Mayer, John H., Middle Lobe Syndrome, Postgrad. Med. 4: 29, 1948

2— Paulson, D. L. and Shaw, R. R., Chronic Atelectasis and Pneumonitis of the Middle Lobe, J. Thor. Surg. 18: 747, 1949.

A Review of the Recent Literature on Antibiotics

Elgin C. Cowart, Jr., M.D.
Brookhaven, Miss.

PROBABLY EVERY practicing physician in this country today makes use of at least one of the antibiotic drugs each day, and it is not always an easy task to determine which drug should be used in any specific case. To use these drugs with the greatest efficiency and with the lowest cost to the patient (because some of these drugs are still very expensive), it is imperative to make a proper etiologic diagnosis and to select the drug which will stand the best chance of offering benefits to the patient. This report is nothing more than a review of the recent literature, covering each antibiotic generally and some of them more specificially.

The antibiotics in general use today include penicillin, aureomycin, streptomycin, chloromycetin, and terramycin. Less commonly used is bacitracin.

Penicillin, being the oldest of the antibiotics, is well known. It is the drug choice for the treatment of all Gram positive infections due to staphylococcus, hemolytic streptococcus, subacute bacterial endocarditis due to non-hemolytic streptococcus, as well as for the treatment of gonorrhea and syphilis.

Bacitracin has a range of effectiveness very similar to that of penicillin. In fact it is so similar that its most important advantage is its effectiveness against penicillin-resistant organisms. While it can be given perenterally, bacitacin is most often used in topical applications. An ointment containing 500 units of bacitracin per gram has been found to be very effective in superficial pyodermas and secondary infections of the skin. This is advantageous in that the allergic index of bacitracin is much less than that of penicillin when used locally. Successful synergistic action of penicillin and bacitracin has been reported in several cases. These in-

---

* Presented at the monthly meeting of the Medical Staff of the King's Daughters Hospital, Brookhaven, Miss., on 5 September, 1951.

clude cases of osteomyelitis, subacute bacterial endocarditis, and meningitis due to staphylococcus aureus.

At the Louisiana State University of Medicine early this year, fifty patients were treated with parenteral bacitracin. Forty-seven of these were cases of surgical infections. In most of them bacitracin was the initial antibiotic treatment. Results were good or excellent in 65 per cent of these cases. Failures and questionable cases included thrombophlebitis, osteomyelitis, meningitis, and endocarditis. The successes fell into a group composed of cases of cellulitis, abscesses, furuncles, carbuncles, and human bite infections. The human bite infections were of particular interest in that they were under control within 48 hours and no surgery was necessary.

Streptomycin has been found to be active against certain Gram positive and Gram negative organisms, including acid-fast bacteria, and actinomyces. It has not been found to be of value in fungus and virus infections. It is effective against many organisms not susceptible to penicillin. Its greatest importance lies in its effectiveness against tuberculosis, tularemia, plague, and urinary tract infections. Dr. Chester Keefer of the Boston University School of Medicine states that there is no drug superior to streptomycin in tuberculous infections, although para-salicylic acid and the sulfones may assist its action.

Streptomycin has a neuro-toxic effect which can be very dangerous. The newer dihydrostreptomycin is much safer in this respect. In the presence of diseased kidneys with decreased function care should be taken in giving large doses of streptomycin.

Except in cases where action is desired locally the bowel streptomycin should be given parenterally, since it is not absorbed from the intestinal tract.

Chloromycetin has been found to be of definite value in typhoid fever, brucellosis, and the rickettsial disease. It has been used successfully in a fairly large series of primary atypical pneumonia. Several common urinary tract pathogens have responded to chloromycetin therapy. Usually the oral dose of 50 mg/kg. body wt./24 hrs. in divided doses every 4 to 6 hours is adequate as an initial dosage. After the symptoms and fever subside the dose is cut in half. A total dose of 10 to 25 grams is usually effective in most acute conditions.

Moseley recently reported the first successful parenteral use of chloromycetin. Blood levels after intramuscular or intravenous administration were comparable, but not significantly superior to, the levels following oral use. He used 1 gram of chloromycetin dissolved in 4 cc. of acetyl dimethylamine, and added to 500 cc. of dextrose or saline for the intravenous administration. For intramuscular use he used the same solution without the dextrose or saline. The intramuscular dose must be given deep in the muscle in order to reduce pain and local tissue necrosis.

Stevenson in Detroit reported two cases of typhoid fever in pregnancy treated successfully with chloromycetin. They found that the fetal cord blood contained significant quantities of the drug, suggesting that the fetus itself obtains some benefit from the antibiotic.

Another report by Smadel mentions eight cases of typhoid treated with a combination of chloromycetin and cortisone, using an initial dose of 3 grams of the antibiotic followed by 1.5gm. every 12 hours for 5 days, then 1.5 gm. daily for 10 days. Earlier experience with chloromycetin alone in 44 typhoid cases showed that an average of 4 days was required before the fever and toxic symptoms subsided. This group of eight cases treated with chloromycetin and cortisone averaged less than 2 days. A few of the eight, treated with larger doses of cortisone, averaged only 15½ hours. The author considers the benefits of cortisone to be due to action on the human host rather than direct action against the infective organism.

Weidman and Parley reported on 2 cases of typhoid treated with large doses of chloromycetin. They recommended a dosage schedule as follows: 2.5 grams initially followed by 250 mg. every 2 hours; after the first week the dose is decreased to 250 mg. every 4 hours and continued for 2 weeks longer. The prolonged administration is important because of the relapse rate of typhoid fever. Several authors have found that there were no relapses in 19 cases treated 9 to 14 days (the time of follow-up was not given), while in 13 cases treated less than 8 days there were 7 relapses. One author who treated 160 cases of typhoid with chloromycetin and reported satisfactory results came to the conclusion that the drug diminishes immunity in the course of the disease and permits massive liberation of toxins from the tissues. This causes severe and often fatal complications after an apparent cure.

Gold and Boger using doses of 250 mg. to 1 gram every 6 hours reported 4 cases of anthrax successfully treated with chloromycetin.

Weiner and Leibler reported 10 cases of salmonellosis treated with this antibiotic. They obtained good results immediately, but had 3 relapses. Cooper reported 5 cases of shigellosis in children treated with good results. Stool cultures became negative within 4 days and there were no relapses. The dosage used ranged from 125 mg. every 4 hours.

A report from Australia states that from July 1949 to September 1949 there were 11 deaths in infants and children due to gastroenteritis. From September until December 1949, although the epidemic of gastroenteritis had grown, there were no deaths. This was attributed to the effects of chloromycetin, which became available in September. In severe cases 100 mg./kg./day for 10 to 12 days were given in the babies' food. Smaller doses were given in less severe cases.

Aureomycin is of value in certain viral and rickettsial diseases, and in some Gram-positive and Gram-negative bacterial infections including some penicillin and streptomycin resistant strains, and in urinary tract infections due to the coliaerogenes group. It is the first agent found to be effective in all five principal venereal diseases — syphilis, gonorrhea, granuloma inguinale, lymphogranuloma inguinale, and chancroid.

Frequently when given orally this drug causes nausea, vomiting, and diarrhea, and irritates the mucous membranes. These effects have been offset by the use of antacids. Experiments have shown that aureomycin is absorbed onto aluminum hydroxide gel, thereby reducing its absorbability. Milk reduces the toxic manifestations as do the methyl cellulose antacids and mucin—aluminum hydroxide magnesium trisilicate, without interfering with the absorption of the drug. Intramuscular injection is very painful and intravenously it has been known to cause thrombophlebitis, although the newer, purer preparations are supposed to be safer.

Hall reported 19 cases of chronic amebiasis treated with aureomycin. He obtained very good results with a dose of.5 gram every 6 hours for 10 days.

Rodriquez reported on the treatment of 67 patients with darkfield positive syphilis. Two grams of aureomycin were given initially and repeated in 4 hours. Then 1 gram was given every 4 hours, day and night, for 11 days. This was a total of 70 grams of aureomycin. Results were comparable to those obtained with 2.8 to 3.4 million units of penicillin intramuscularly. Long range follow-up was not reported.

A series of 193 patients with gonorrhea were treated with aureomycin in 2 doses of 500 mg. each, given 6 hours apart. Within 24 hours smears and cultures were negative. Within 48 hours the urethral discharge had ceased. 60 cases with adequate follow-up were cured. Three were definite failures.

Thirty-two patients with brucellosis were treated with aureomycin and followed for six months. Relapse occurred in only 7 cases (15 per cent and seemed to be due to the presence of foci of infection. Another group of 35 cases showed very good immediate results with only 2 failures. Later results revealed 11 recurrences. It was concluded that aureomycin induces improvement rather than a definite cure.

An ophthalmic ointment of aureomycin is considered more effective in trachoma than is penicillin or the sulfonamides, causing inclusion bodies and bacteria to disappear rapidly. The hyperplastic lesions of the conjunctiva, however, do not respond as rapidly as to penicillin. Chloromycetin has been found to be less effective than aureomycin.

Carter studied the effects of aureomycin and chloromycetin on herpes zoster. He observed 44 cases treated thusly; 11 with chloromycetin, 22 with aureomycin, and 11 with inert capsules. He concluded that the only advantage in using the two antibiotics was to control secondary infections. We recently had a patient in King's Daughters Hospital who had herpes zoster complicated by encephalitis. He responded rapidly to aureomycin 250 mg. every 4 hours. His drowsiness and fever subsided completely within 48 hours. The herpes lesions were apparently not affected by the aureomycin.

A group of 309 cases of common head colds were treated in this manner; half of them were given inert capsules, half were given aureomycin. The authors reported that there was no appreciable difference in the results obtained in the two groups.

Terramycin appears to have the most widespread effective range of all the antibiotics. It is useful in infections due to many Gram-positive and Gram-negative organisms, including both aerobic and non-aerobic groups, spirochetes, rickettsiae, and some viruses. Recent studies suggest that it may be effective in amebiasis. The most effective adult dose is ordinarily 2 to 3 grams daily in divided doses every 4 to 6 hours. It is usually better to continue administration of the drug for 48 hours after the fever and symptoms have subsided.

Sayer at the University of Washington treated 108 different cases of various diseases with terramycin and obtained good results in all of them. These included infections of the urinary tract, bacterial pneumonia, pertussis, tonsillitis, bacillary dysentery, amebiasis, typhoid fever, and subacute bacterial endocarditis.

The pediatric staff at Philadelphia General Hospital used terramycin alone in the treatment of 61 children who had various types of infections. The overall impression was that terramycin was effective in the common bacterial respiratory infections of children; that terramycin produced a more rapid responce than pencillin in cases of otitis media, tonsillitis, croup, and bronchopeumonia; that terramycin produced a slower response than penicillin in patients with lobar pneumonia. They recommend continuing the drug's administration for 5 to 7 days after fever subsides.

In other reports terramycin has been found to be effective in brucellosis, pertussis, impetigo, pleurisy, urinary tract infections, and general or local infections due to staphylococcus or streptococcus.

In 130 cases of gonorrhea treated with terramycin the percentage of cures was 95 to 96 per cent.

Booher, Farrell and West studied a series of 160 cases of uncomplicated pertussis in an effort to compare the effects of the various antibiotics. These were their conclusions: Streptomycin is of only questionable value; terramycin, chloromycetin, and aureomycin are equally effective in shortening the duration of the whooping stage; the cough stage is not markedly shortened by any of the drugs; the duration of fever is significantly reduced with both terramycin and chloromycetin; no advantage is noted in giving the drugs in combination; the total length of the disease is shortened more by terramycin; the minimum effective dose for all three drugs is 50mg./kg. of body weight in 24 hours.

In a different series of 42 cases of pertussis the conclusion was reached that in infants the combination of an antibiotic and human immune serum was the most efficient treatment.

The question of synergism and antagonism in the use of the antibiotics is an important one. It is a not infrequent happening to see a physician order two, or sometimes even three, antibiotics in an attempt to hit a disease process "with both barrels." This "shotgun therapy" may defeat its own purpose. As yet there are no definite conclusions, no hard and fast rules by which to govern our actions. Some work has already been done on this question and there will be much more before we know the whole story.

There seems to be a definite antagonistic effect between penicillin and chloromycetin or aureomycin which occurs only if chloromycetin or aureomycin is given prior to or simultaneously with penicillin. Penicillin and streptomycin or bacitracin have a synergistic action and the latter drugs can overcome the antagonism between penicillin and aureomycin or chloromycetin. This antagonism appears to be due to the fact that aureomycin and chloromycetin are bacteriostatic, thus inhibiting the multiplication of bacteria. Penicillin is most effective against bacteria while they are in the rapidly growing stage.

Herrell has reported that aureomycin and dihydrostreptomycin are more effective in brucellosis than is aureomycin alone.

Thus far no definite conclusions have been reached. Experimentation is currently progressing and in the near future many reports will appear in the literature. It is up to us to keep abreast of the developments so that we may use these "wonder" drugs to the best advantage.

BIBLIOGRAPHY

1— Booher, C., Farrell, J., West, E., Pertussis. Clinical Comparison of the Newer Antibiotics, International Medical Digest, 59:50, July, 1951.
2— Cooper, M., Keller, H., Dysentery Due To Sulfonamide-Resistant Shigella Sonnei Controlled with Chloromycetin, IMD*, 58:175, March, 1951.
3— Editorial, Aureomycin Intramuscularly, IMD*, 59:59, July, 1951.
4— Editorial, Antibiotic Synergism and Antagonism, IMD*, 58:120, February, 1951.
5— Editorials and Comments, J. A. M. A.**, 146:563 and 1613, 1951.
6— Finland, M., The Present Status of Antibiotics in Bacterial Infections, Bulletin of New York Academy of Medicine, April, 1951
7— Finnerty, E., Bacitracin in Dermatology, USN Med. News Letter, 18: No. 3:9
8— Gold, H., Boger, W., Newer Antibiotics in the Treatment of Anthrax, IMD*, 58:323, June, 1951
9— Hall, W., The Treatment of Chronic Human Amebiasis with Aureomycin, IMD*, 58:343, June, 1951
10— Hoagland, R., Deitz, E., Myers, P., Cosand, H., Aureomycin in the Treatment of the Common Cold, IMD*, 58:94, February, 1951
11— Janbon, M., Bertrand, L., Aureomycin in Brucellosis, Current Medical Digest, August, 1951
12— Jawetz, E., Gunnison, J., Speck, R., Coleman, V., Studies on Antibiotic Synergism and Antagonism, IMD*, 58:289, May, 1951
13— Keefer, Chester, Evaluation of Antibiotic Therapy, Postgraduate Medicine, 9: no. 2, February, 1951
14— Krantz, J., Carr, C., Response of Bacteria to

Antibiotics, Pharmacological Principles of Medical Practice, 2nd Ed., Williams and Wilkins Co.
15— Laporte, A., Fritel, D., Ricordiau, G., Bertourne, C., The Problem of Relapses in Typhoid and Paratyphoid Fevers Treated with Chloromycetin, IMD*, 58:24, January, 1951
16— Medical Literature Abstracts, J. A. M. A.**, 146: pages 214, 292, 674, 751, 971, 1083, 1163, 1167, 1349, 1354, and 1453, 1951
17— Rouques, L., Aureomycin and Chloromycetin in the Treatment of Trachoma, IMD*, 59:34, July, 1951
18— Sayer, R., Michel, J., Moll, F., Kirby, W., Terramycin, Clinical, Pharmacologic, and Bacteriologic Studies, IMD*, 59:17, July, 1951
19— Weiner, H., Leibler, J., Chloromycetin in Salmonellosis, J. A. M. A.** 145:802, 1951
20— Wellman, W., Combinations of Antibiotics in the Treatment of Infectious Diseases, Minnesota Medicine, June, 1951

* International Medical Digest
** Journal of the American Medical Association

Common Types of Headache and Their Treatment*

J. Dana Darnley, M.D.
Jackson, Miss.

HEADACHE IN ONE form or another as a primary or secondary complaint certainly ranks as one of the commonest problems we meet in everyday practice. Bassoe, quoted by Wolff, stated that migraine alone is the commonest complaint of civilized people. Grimes found that of 15,000 individuals examined in general practice with reference to migraine, 1,200 or 8 per cent were afflicted. In his text on headache, Wolff states: "the most commonly encountered headaches are those of migraine (also including related vascular head pain) and the headaches from sustained muscle contraction associated with anxiety and emotional tension. The headaches associated with fever and septicemia probably rank next in frequency and then come those due to nasal and paranasal, ear, tooth, and eye disease. The headaches of meningitis, intracranial aneurysm, brain tumor, and brain abscess, though important and dramatic, are less common." For the purposes of our discussion tonight we will omit consideration of the head pain associated with meningitis, aneurysm, tumor, and abscess.

For all types of head pain the key to correct evaluation and ultimate treatment of the cause in the great majority of cases is the **full and rounded story of that pain** and of the patient who suffers it. The history must be thorough, routinized enough so that no stones may be left unturned by leading questions, and still flexible enough to catch the variations that may be significant in a given patient. Early guides to categorizing head pain can be found in the patient's answers to routine questions—questions, for example, on the over-all duration of the head pain (that is, its life history plotted against the patient's own life history); questions on the quality and quantity of pain; the localization (and consistent lateralization, if any) of the head pain; the length of individual attacks; the frequency of attacks; the relationship of head pain to potential influences as varied as: life-situation (physical and/or emotional), posture, the cough-strain-sneeze triad, time of day, and seasons. Concomitant symptoms in other organs (eyes, ears, or nose) or systems (gastrointestinal) are important to know about. The sum of these and other answers gives a clear profile of the patient's head pain problem and upon this the provisional (and often final) diagnosis can be made.

In his final summary on head pain, Wolff states: "It may be said by way of gross generalization that the majority of headaches result from **reversible tissue changes,** that is, from distention of cranial vessels and from sustained contraction of skeletal muscles of the head and neck." This statement sets up the two major classes of head pain with which we will deal—namely, so-called vascular headaches and muscle tension headaches.

The vascular headache category includes: migraine, the headache associated with arterial hypertension, histamine cephalalgia, atypical facial neuralgias, and the headache associated with fever, sepsis, etc., among others. Wolff groups all of these together as vascular headaches because of sound experimental proof that the same underlying patho-physiology is common to them all. Distention of pain-sensitive arterial walls with added stretch at each cardiac systole is their common denominator. The variable in each type consists chiefly in the intra- or extra-cranial arterial system involved—for example, the external carotid and its branches in migraine and in the headache associated with arterial hypertension, the cerebral and pial vessels in histamine cephalalgia and the headache associated with fever and sepsis, and the internal maxillary and its branches in the atypical facial neuralgias. The individual types of vascular headache have more than this patho-physiological genesis in common; there is a basic resemblance in symptomatology and in response to treatment.

---

* Presented before the meeting of the Central Medical Society, September 4, 1951.

Migraine is probably the most familiar headache of them all. Typically, the migraine patient gives a history of recurrent and paroxysmal headache, intense and throbbing, usually unilateral at onset but often generalized later, usually accompanied by nausea, vomiting, photophobia, marked irritability, diarrhea or constipation. The head pain is the most prominent part of the migraine syndrome, which also includes: abdominal distention, cold and clammy extremities, vertigo, tinnitus, fever, and chilly sensations. There is often a marked disturbance of water metabolism with polyuria plus visible and palpable swelling of the extremities and the face. There is frequently associated unilateral nasal congestion or rhinorrhoea and many visual symptoms before, during, and sometimes after the attack. These visual symptoms commonly consist of prodromal scintillating scotomata or homonymous hemianopsia in the visual field opposite the side of initial head pain. The scotomata and field defect occur at the time of preheadache cerebral and retinal vaso-constriction. Branches of the external carotid artery, especially the superficial temporary artery and its branches, stand out prominently in the scalp during the head pain; after the attack has been present for some hours, these vessels feel as rigid as pipes and are very tender. At that point the characteristic throbbing head pain is superseded by an intense steady ache. Transient tissue changes in the walls of these vessels have been demonstrated at this stage, chiefly oedema. The migraine pain is most commonly temporal, but may be frontal, supraorbital, retro-orbital or even occipital. The duration of each attack varies from a few hours to a few days or even as long as a week. The frequency also varies—in women, there is often a definite relationship to menstruation, and in both sexes the attacks frequently occur during periods of supposed relaxation, the "let-down" phase—for example not during combat, but afterwards, and not during the busy week but over the week-end. The age of onset for migraine is frequently during adolescence and the attacks frequently wear off in late middle life; on the other hand, quite unpredictably, migraine may first appear in late middle life. There may be only three or four attacks in a life time; they may be regular interspersed throughout a life-time, or heavily concentrated in one or a few months time. Migraine is a family affair; similar "sick-headaches" are very common in the patient's immediate and/or distant relatives; Lennox found a history of 61 per cent familial incidence in his series of migraine patients. A family history of epilepsy has been reported to be more common in migraine patients than in others, but this has been further qualified of late to apply only to those who quite consistently have premonitory symptoms such as scotomata, paraesthesiae in the opposite arm or leg, or speech disturbances and also have an abnormal EEG themselves.

The headache associated with arterial hypertension, like migraine, is attributable to distension and systolic stretch of pain-sensitive branches of the external carotid artery. Like migraine, it, too, will respond satisfactorily to ergot derivatives; naturally, these drugs have to be used with great caution in hypertensives. Symptomatically, too, the two types are related; the headache associated with arterial hypertension commonly begins between midnight and 4:00 A.M. and reaches a peak before breakfast, frequently waking the patient. It may be felt at the vertex or may be unilateral or generalized; it is throbbing, deep, and aching and usually worse when the patient lies down. It is aggravated by cough, strain, and sneeze, by bending over, and by mental effort. It usually wears off as the day goes on, aided especially by the morning coffee. In connection with these particular headaches, Wolff makes some interesting points about the primary importance of the contractile state or tone of the vessel walls in determining the presence or absence of headache, regardless of the level of the systemic blood pressure. He writes: "the high systemic arterial pressure is an important, but not a sufficient, condition for the headache." He points out that it is the relaxed state of the cranial artery, which, in any case, is the crucial factor in these headaches, especially, of course, when the blood pressure is elevated. Conversely, when the tone of the cranial arterial walls is high, headache in unlikely, regardless of the level of systemic blood pressure. Wolff goes on to add that, as with all other vascular head pain, a second variety of headache resulting from sustained contraction of head and neck muscles is often associated with arterial hypertension and prolongs the complaint of head pain.

Histamine headaches, though originally separately classified by Horton, are considered akin to migraine and other vascular headaches by Wolff, who has experimentally proved these headaches to be due to painful distention and systolic stretch of cerebral and pial vessels. For example, histamine headache can be abolished temporarily by increasing cerebrospinal fluid pressure, thus preventing or overcoming the distention of the offending cerebral and pial vessels which have free access to the subarachnoid space. The spinal fluid pressure can be increased, incidentally, by running sterile saline into the lumbar subarachnoid space via a lumbar puncture needle. Wolff concedes a quantitative, but not qualitative, distinction between histamine and migraine headaches—for example, the frequency of early morning (3:00 to 4:00) spells is probably greater with histamine headaches; the duration of typical histamine headaches is definitely shorter than migraine headaches, averaging 15 to 30 minutes with as many as four to five attacks in a single day; marked flushing of the face is usual with histamine, occasional with migraine in which a sickly pallor is probably more common. Histamine headaches, too, respond to ergot derivatives, specifically. Wolff favors the use of ergot derivatives in histamine headaches rather than histamine desensitization; we will hear a little bit more of this later. Just as an interesting aside at this point, we might add that the headache associated with fever, bacteremia and sepsis of any kind (typhoid, typhus, influenza, etc.) can be bracketed with histamine cephalalgia on the basis of painful distention of the same set of intracranial vessels, the cerebral and pial vessels.

Wolff classifies so-called atypical facial neuralgias (as distinguished from the typical facial neuralgia of tic douloureux) as another example of vascular headaches. In this group are included the better-known spheno-palatine neuralgia or lower half headache of Sluder and the lesser-known Vidian neuralgia as well as a few other fancy names. Wolff feels these are all due to painful distention of the internal maxillary artery and its branches despite the other claims of cure by: 1) cocainization of the spheno-palatine ganglion, 2) submucous resection, and 3) drainage of the sphenoid sinus. All these are characterized by recurrent attacks of intense, throbbing, unilateral aching head pain, differing only in distribution from those previously described; this distribution is characteristically centered in the orbit and the base of the nose, the jaws and teeth, the face, the ear, and the occiput. The same changes in eye and nose as described above prevail in this type of headache—that is, the lacrimation, the conjunctival injection, the photophobia, and the rhinorrhoea, as well as swelling of the turbinates. These headaches, like the others described above, are most consistently relieved by ergot derivatives.

Though pigeon-holing is impossible and undesirable, it does appear that certain personality features and reactions are dominant in individuals with migraine and undoubtedly in those with other vascular headaches. This has been summed up beautifully by Wolff who writes: "These include feelings of insecurity with tension, manifested as inflexibility, conscientiousness, meticulousness, perfectionism, and resentment. Frustration, dissatisfaction, and intolerance of self and others result. To gain approval the patient works harder and harder at a high cost of energy. The tension associated with repeated frustration, sustained resentment, and anxiety, plus fatigue and prostration, becomes the setting in which the migraine (or other) attack occurs. These individuals are predisposed to sustained and pernicious emotional states; during such states labile physiologic mechanisms set off the chain of events constituting the attack of migraine." This can be applied with slight modification to the other vascular headache types as well.

Wolff's other major category of head pain is that of headache from sustained muscle contraction. His experiments have demonstrated by electromyography that sustained contraction of muscle is a source of pain and paraesthesiae of the head in tense, dissatisfied, apprehensive, anxious people. This same muscle contraction headache associated with anxiety and tension may occur coupled with other headaches, such as the vascular headache of migraine or those due to infection, inflammation, trauma or other forms of noxious stimulation from any portion of the head. In anxious, tense persons subject to muscle tension headaches even minimal noxious stimulation of any cranial structure may intensify already sustained muscle contraction and a moderately intense headache will ensue. The clinical picture is always the same, whatever the cause. Outstanding are feelings of tightness, "bands," "head-in-a-vise," "caps," pain on combing or brushing the hair, pain on putting on a hat, and cramp-like aches, either unilateral or bilateral, involving the occipital, parietal, or frontal regions. There may be one or more tender spots in the scalp. These headaches may be associated with bright spots before the eyes, tinnitus and vertigo. The pain may have its onset at any time and may be of any duration, but is the most sustained of any type of headache, persistent for days, weeks, months, or years. The patient is usually most comfortable in the upright sitting position, especially when the head is inclined forward and supported by the hands. Examination reveals muscle contraction, muscular nodes, and areas of tenderness, and sometimes limited motion of the head, neck and jaws, and ear tenderness.

The treatment of vascular headaches—with special reference to migraine—includes two phases: 1) the treatment of the acute attack and 2) (and more importantly) the long-term treatment aimed at prevention of attacks. This latter phase chiefly embodies psychotherapy. The acute vascular headache attack itself is treated nonspecifically by oral administration of .3 to .6 gm. acetylsalicylic acid when intensity is slight, or 60 mg. of codeine phosphate for a more intense headache. It is treated specifically by means of 0.25 to 0.5 mgs. of ergotamine tartrate given intramuscularly or intravenously. The amount of ergotamine tartrate administered should not exceed 0.5 mg. in any one week. Though less effective, ergotamine tartrate may be given by mouth in 4 to 5 mg. amounts, to be swallowed or placed under the tongue. This may be repeated again in 30 minutes and the third time in another 30 minutes if the headache has not been eliminated. The amount so administered should not exceed 11 mgs. in any one week. In connection with this the current use of cafergot offers much to be recommended. The directions are much the same as that for oral ergotamine: anywhere from two to four cafergot tablets to be taken stat with the onset of head pain, then one each half hour for the next two hours, if necessary. Not over 10 to 12 tablets should be given in the course of a week. The cafergot tablet contains 1 mg. of ergotamine and 100 mgs. of caffeine. It is also important that the patient cease all activity at the onset of the headache. Preferably the patient should retire to an absolutely quiet, darkened room and rest (probably most comfortably propped up in bed) for at least 3 hours. Ice caps may be of very definite benefit.

Much more difficult—and more important—is the prevention of attacks. As Wolff points out, it is of interest that any procedure that enlists the interest and enthusiasm of the physician, or convinces the patient that he is being cared for will modify for a time the frequency and intensity of attacks. Procedures aimed at a better understanding of the patient, his life situation, and factors that constitute a threat, can be of basic therapeutic importance. As mentioned above, patients with migraine headaches are tense, driving, order-loving, rigid persons, who during periods of threat or conflict become progressively more tense and fatigued. Management should include methods that reduce first of all the potency of precipitating factors in the tension. The long-term aim of therapy should be that of helping the individual to understand the basis of the tension, the factors in his life that aggravate it, and to aid him in resolving his conflicts. Wolff states that about 2 patients out of 3 can be appreciably helped by such aid. As stated, since essentially the same psychodynamic factors underly all vascular headaches, the same considerations must be kept in mind in the long-time therapy of each.

The management of headache from sustained muscle contraction (muscle tension headaches) also has its two phases: 1) treatment of the acute attack and 2) the long-term treatment. The acute attack can be handled in many ways; by local infiltration of tender areas with 1 per cent procaine, by the use of dry or moist heat locally, by massage of the tender parts; by the use of nicotinic acid, though as Wolff points out, the exact rationale for its use is not clear—presumed muscle ischemia secondary to sustained contraction may be relieved by this vasodilator, but this observation is hard to evaluate because the flush associated with the usual therapeutic amounts of nicotinic acid has a potent psychological effect on those with tension states and accompanying symptoms. After reassurance that there is no serious brain disease, which in itself is usually of great therapeutic value, psychocatharsis and modification of the life situation usually affords additional relaxation and feelings of security. Probably the most important therapeutic effect is achieved by the physician, who can help the patient to recognize his faulty attitudes, to change them, and to accept or adjust to what seem heretofore intolerable or hopeless situations.

Remember the need for accurately differentiating pure vascular headaches from pure muscle tension headaches, chiefly to determine the type of treatment indicated for the acute attack—e.g., ergot derivatives will do nothing good for the muscle tension headaches while heat, massage, and procaine infiltration will have little, if any, effect on genuine vascular head pain.

In conclusion, it should be noted that tension, anxiety, and the conflicts that engender them, are the underlying factors in all the headache types we have discussed tonight. The importance of this fact must be realized and long-term treatment directed along the lines suggested in each case. This takes us back, finally, to the significance and indispensability of a full and rounded history, for only through this medium will the patient's true life-situation come to light.

DISCUSSION

R. H. McARTHUR, M.D, Jackson— I should like to bring out a few points regarding headaches from the ear, nose and throat point of view. First, that by far the greater majority of headaches attributed to "sinus trouble" by the patient are not associated with sinusitis at all but are instead headaches of the vascular type described by Dr. Darnley. The associated nasal congestion and rhinorrhea which are characteristic of these headaches are the basis for the patient's belief that he has sinus trouble and often leads him to self medication including the use of increasingly strong nose drops which actually prolong the course of the headaches and add the serious problem of nose drop addiction which in itself is very difficult to break.

Acute congestive or suppurative sinusitis does of course produce pain, however this is in the great majority of cases localized to the area of the affected sinus or sinuses and seldom produces generalized headache unless marked temperature elevation is present. The diagnosis in such cases is rarely obscure.

In regard to the true Sluder's or S-P neuralgia I would like to take issue with Dr. Darnley only in this respect that although these cases most likely are on a vascular spasm basis, cocainization of the ganglion will frequently give rather dramatic relief, probably not as a result of interrupting the pain fibers but rather by its action on the complex autonomic fibers of this ganglion with resultant restoration of tone to the walls of the interior maxillary artery.

I fully realize that in the past too many submucous resections have been performed without justifiable result in relieving the headaches. These were the pure vascular or tension headache cases in which insufficient nasal pathology was present to be a real indication for resection but in which the latter was performed as a last resort. This of course can not be condoned. On the other hand there is a very definite percentage of cases in which a constant pressure point exists between a septal spur and a turbinate or the S-P area of the lateral wall of the nose thus producing frequent severe unilateral headaches. Since nasal congestion aggravates the mechanical pressure existing it is often the trigger mechanism for such headaches and since nasal congestion accompanies so many conditions these headaches are frequently confused with migraine, etc. Relief of the pain by repeated cocainization of the pressure point on several occasions then gives us a definite indication for submucous resection.

Other headaches which we will only mention to conserve time are those due to tumors of the nose, nasopharynx, and accessory sinuses; those of dental origin such as the unerupted third molar headaches; and those of otic origin as the chronic otitis media with petrositis or cholesteatoma complicating.

I would like to emphasize what Dr. Darnley has brought out that the patient with chronic headaches is miserable and although he may be exasperating at times he deserves the interest, understanding and investigative desires of us all since some or all of us are usually able to correct that patient's complaint.

Dr. Darnley has asked me to discuss the place of histamine in the treatment of headaches. I have not used the drug extensively but in my experience histamine in either desensitizing doses or as intravenous medication has been rather disappointing in that it seemed to obtain only temporary relief with no permanent results for my patients.

The Private Physician's Responsibility to the Volunteer Cancer Control Program

Hugh A. Gamble, M.D.
Greenville, Mississippi

DUE, IT MUST BE admitted, in large measure to the intelligent and the effective work of the Public Health Service, the average life expectancy in this country has been tremendously increased and almost approximates the Biblical score of seven decades. The steadily increasing number of persons living to be more than fifty years of age results in having more individuals to reach the age period during which malignancy is most commonly encountered.

The steadily increasing of incidence of malignancies and the lethal possibilities of all neoplasms will continue to cause concern to all thoughtful physicians.

The Women's Field Army of the American Cancer Society first began its work in the state of Mississippi in 1936. In 1945, the Mississippi Division of the American Cancer Society was formally organized and each year has very materially enlarged its sphere of service. The medical profession of this state is well aware of the enormous contribution made by the Mississippi Division of the American Cancer Society to the welfare of the citizens of this state and to the educational opportunities brought to the profession and to the laity.

Unquestionably, many physicians in the state, despite ample opportunities to do so, have not acquainted themselves with the policies of the Mississippi Division of the American Cancer Society. It is felt, therefore, proper and pertinent to draw to the attention of the physicians of Mississippi through the medium of their official publication, **The Mississippi Doctor**, these facts:

This service, that is the service of the Mississippi Division of the American Cancer Society, is intended only for indigent cancer patients residing in the state of Mississippi. Patients who are able to pay for medical services are not eligible for treatment under this program. It is the responsibility of practicing physicians to refer for treatment under this program only patients who, to their knowledge, are unable to pay. If the family physician charges for his services, he has no moral right to refer the patient for treatment under this program. It is, to say the least, confusing to a patient to have his family physician fill out an application for charity work and then to charge the patient for having done so. It is further somewhat distressing when a patient returns from one of the tumor clinics and, for example, is to be given Testosterone, to have the physician charge $2.00 for each administration of the drug. The cost of the drug, etc., under proper circumstances, is paid by the Cancer Society.

There is a committee functioning in this state and representing the Mississippi State Medical Association which works in conjunction with the Mississippi Division of the American Cancer Society. Each year the terms of three members expire and they are, in turn, replaced by the President of the Mississippi State Medical Association. This committee has no connection in any fashion with the Mississippi State Board of Health and is not appointed by the Mississippi State Board of Health and indeed these appointments are made entirely at the discretion of the President of the Mississippi State Medical Association. It has been the unfailing and unanimous feeling of this committee that patients cared for under the program of the American Cancer Society, the Mississippi Division, should be treated only in tumor clinics approved by the American College of Surgeons. Neither the committee nor the Mississippi Division of the American Cancer Society have any part in determining which clinic shall, or shall not, be approved. As a matter of fact, the American College of Surgeons, many years ago, laid down certain requirements for approval as a tumor clinic and the American College of Surgeons has to the present time conducted its own investigations of clinics and has approved or disapproved each clinic as in the judgment of the American College of Surgeons was proper. The Mississippi Division of the American Cancer Society, acting upon the advice of the committee representing the Mississippi State Medical Association, simply adopted the policy from which it never deviates of referring patients only to tumor clinics approved by the College of Surgeons.

It should certainly be well understood that the physicians who work in the various tumor clinics do not receive one cent of compensation for any work done for these patients. The examinations are made without compensation to the physician, the surgery is done without payment of one cent to the surgeon and these clinics and their personnel do not receive one dime in payment for their professional services.

The American Cancer Society, the Mississippi Division, does not pay any individual physician or any group of physicians for their professional services.

The enormous expense incident to an approved tumor clinic is well understood. It is necessary, to have an approved tumor clinic, that there be at that clinic a qualified pathologist, a radiologist, extensive laboratory equipment, deep therapy machines, radium, and many other costly items. As a consequence, the sums paid to the participating hospitals for the care of these patients is actually less than it costs the hospitals to care for them.

It is of interest that during the past year in excess of 1500 patients, all certified by their referring physicians to be charity patients, have applied for care under this program and no patient found, in the judgment of the tumor clinics, to be worthy of treatment has been refused treatment.

It is further worthy of comment that of the entire budget of the Mississippi Division of the American Cancer Society only 7 per cent is used for administrative purposes. In other words, this is one program which does not use the funds given to it to hire a huge number of people and pay a large amount out in salaries.

As chairman of the committee appointed by the president of the Mississippi State Medical Association to represent the State Medical Association in dealing with the Mississippi Division of the American Cancer Society, I would like personally and on behalf of my colleagues to thank those members of the profession who have so ably assisted in carrying on this work and I would like to urge every practicing physician in the state of Mississippi to acquaint himself with this work. Its enormous importance to the welfare of the citizens of this state cannot be seriously questioned and the splendid administrative work, the conscientiousness and competency of the State Commander cannot be fairly questioned by any intelligent and informed person.

STATE MEETING

Preparations for the eighty-fourth annual meeting of the Mississippi State Medical Association are nearing completion, as the May 13-15 date for the state's foremost medical convocation approaches.

The meeting is scheduled for Jackson with headquarters in the Hotel Robert E. Lee. The initial session on May 13 will be that of the House of Delegates at 9:00 a.m.

The scientific program in six sections will begin on the afternoon of May 13 and continue through the three-day meeting. Outstanding programs will be offered by the Sections on Eye, Ear, Nose and Throat; Obstetrics and Gynecology; Medicine; Hygiene and Public Health; Pediatrics; and Surgery. Early estimates disclose that more than thirty essayists will appear.

Highlight of the entertainment will be the fellowship hour, banquet, and dance on May 14 in the Victory Room of the Hotel Heidelberg.

The May 14 noon hour has been reserved for the annual Doctor's Day luncheon sponsored by the Auxiliary. In addition, there will be golfing competition at the Jackson Country Club and skeet at the Capital Gun Club. Physician sportsmen may compete for trophies which will be awarded permanently to winners.

Twenty-five commercial exhibitors have made reservations for exhibit space and it is known that an interesting group of scientific exhibits will be seen.

Complementing a well-rounded program for the Auxiliary meeting, the ladies will be guests at a tea in the Governor's Mansion.

Members will enjoy the convenience of preregistering, eliminating the necessity of waiting in line for preparation of badges and the like, provided they complete a pre-registration form being mailed to them and return it to the Central Office, 507-508 First Federal Building.

The executive secretary announces that a special Newsletter concerning arrangements, program, and entertainment will be sent out to each member of the State Association in the near future. During the month an advanced program to include the scientific work will be mailed.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. J. G. Thompson .... Jackson
President
Dr. Lamar Arrington................ Meridian
President-elect
Dr. Geo. W. Twente .... Jackson
Secretary
Dr. Rowalnd B. Kennedy .... Jackson
Executive Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
H. T. Smith, M.D. .... President
McGehee, Ark.
L. S. Nease, M.D. .... President-elect
Fayetteville, Ark.
Howard A. Nelson, M.D. .... Vice-President
Newport, Tenn.
Fount Richardson, M.D. .... Vice-President
Greenwood, Miss.
Dewey Peters M. D. .... Vice-President
Knoxville, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

ATTEND YOUR STATE MEETING

The Mississippi State Medical Association is just around the corner. It meets in Jackson, cross roads of the deep South, a rapidly growing city whose people are clever and cordial and the doctors progressive and friendly. A four-year medical school will soon be on the way in this capital city. The location is one of the best to be found in the nation. This school will be modern and outstanding in several respects. It will no doubt give special training for general practitioners, and an ideal school for training public health doctors. Through the central hospital set-up this school will be the heart, soul and driving power for all-round medical service to all the people in our state.

It is very important that every doctor make an effort to attend the state medical meeting in May. The scientific program will be good. The state association is where we transact business. Many things of importance are scheduled to come before the association. Since our last meeting many of our stalwart leaders have passed on. Others must close the ranks.

Make your reservations now, plan to go at the first and stay until the last. Mississippi is making rapid progress in scientific medicine. It will still go faster when the four-year medical school with its affiliated system is in action. Let us make our state association the very best. To do this you must attend its annual sessions.

* * * *

The per capita fund for the indigent sick poses our immediate attention for legislative action. The rise in prices requires also that the price per day be increased. It is much better for the indigents to be treated in our hospitals along with other patients, especially in a state like ours. It seems that seven dollars per day should be adequate. Every doctor should speak to his representative about this matter. The legislature will be coming to a close before very long now.

* * * *

The Academy of General Practice held a fine session in Atlantic City the last week in March. Our fine friend, Dr. R. B. Robbins of Camden, Ark., was elevated to the presidency. He is an able practitioner, a fine citizen, and an outstanding statesman in the field of medicine. He is rendering a great service to organized medicine. We congratulate this rapidly growing national association on having him as its leader.

* * * *

Earache at one time was quite a problem for the general practitioner. He punctured some drums, treated all, but many ruptured. A running ear was very common. The healing was slow. Now in the very beginning doctors usually give plenty of penicillin and sulfa and not many ear drums have to be punctured. We are now wondering if abscessed teeth can not be prevented in like manner. We think they can. The saving of millions of teeth would solve a big social and economical problem.

The exhibitors at the Mid-South are a big help in carrying on the great Medical Assembly. The expenses of the essayists are thus financed, which helps bring us eminent men. The exhibitors at our state meeting can likewise be a great financial help. We should have more and should call on them. It is fine cooperation to support our exhibitors and our advertisers, everything else being equal.

* * * *

The Baxter Laboratories are a very fine industry, a branch of which is in our state at Cleveland. Products are made there now and shipped to Chicago for distribution. If you have an opportunity, visit the Baxter Laboratories. You will be very proud that their products are made in our state.

* * * *

Many of our leaders in the medical ranks will be absent at our next meeting. They have passed on. It is inspiring to note that Dr. G. S. Bryan is going along and doing quite well after an eight-year battle with a failing heart. We had a delightful evening with him not long ago. Informative and inspiring to talk with, he is the sage of Monticello of our medical profession in Mississippi. Go to see him. Write him a note. We are asking him to contribute to the May issue, our State Association number.

News and Comment

GENERAL PRACTICE POSTGRADUATE TRAINING

The General Practice Group of the University of Tennessee has established a postgraduate clinical training program for general practitioners. This has been approved by the American Academy of General Practice for its members.

The program is designed for the general practitioner on an individual basis according to his individual needs. One week to one month of training is offered.

Each doctor will spend morning hours in his choice of any one of the University specialty fields. This will be active work at the residential level. The afternoons will be spent in the General Practice Clinic where the medical students get active practice experience. Evenings are utilized in the emergency room of the John Gaston Hospital which is supervised by members of the General Practice Staff.

General practitioners who would like to participate or who desire further information, may write to the General Practice Office, University of Tennessee, Memphis, Tennessee. There is no fee charged for this training.

NORTHEAST MISSISSIPPI MEDICAL SOCIETY

The March 11 meeting of the Northeast Mississippi Medical Society, held in Starkville, kept to its usual standard in program and hospitality. Dr. W. W. Taylor from the Lyle Motley Clinic in Memphis, and Dr. Clifford Tillman of Natchez were the guest essayists, the former discussing new drugs for hypertension and Dr. Tillman summarizing ACTH and cortisone.

Dr. Lamar Arrington of Meridian, state president-elect, and Rowland B. Kennedy, the new executive secretary, brought messages at the banquet, where good fellowship reigned in special measure.

MEDICAL EDUCATION SCHOLARSHIPS

Already many applications for state medical education scholarship loans to become effective in summer and fall of 1952 have been received. according to State Medical Education Board office in Jackson.

Students interested in such loans, especially those desiring to apply for loans to become effective during the summer months, are urged to contact the State Medical Education Board, 1205 Woolfolk State Office Building, Jackson, Mississippi, at once for information and application forms.

Purpose of state medical education loans is to obtain more family doctors for the rural areas of Mississippi by assisting deserving Mississippi medical students to meet the costs of medical education. Recipients of these loans agree to enter practice in rural areas of the state of Mississippi. Over 60 young physicians who have completed medical training with the aid of such loans are now practicing in the state. Another group of approximately 60 are now in internship and will be ready to enter practice this summer and fall.

AVAILABLE LOCATION

Office for doctor in a town of 10,000 population with a trade area of 40,000 to 60,000 population. Town has modern 85-bed, open staff, community hospital approved by American College of Surgeons.

Office has four rooms plus laboratory room with a total of 600 square feet of floor space. Centrally heated and air conditioned. Waiting room entrance on a main business street. Private parking lot for cars included.

Please direct inquiries to A. H. Garner, 113-115 West Court Street, Paragould, Arkansas. Business phone 3180. Res. Phone 4208. (1tp

DEATHS

DR. B. L. BYRD

Dr. Benjamin L. Byrd, age 82, retired physician, died in Clio at the home of his daughter, Mrs. John S. Tillman.

Dr. Byrd was born in Dale County on the Byrd plantation, now a part of the Camp Rucker reservation. He was the son of the late David M. Bryd and Susan Jane Carroll Byrd, pioneer citizens of Dale County.

Dr. Byrd graduated from the University of Alabama School of Medicine at Mobile in 1892 and completed his postgraduate work at Tulane University in New Orleans.

He practiced medicine in Dale and Coffee counties from the early nineties until 1918 when he moved to Mississippi during World War I due to an acute shortage of doctors in that state. He settled in Cleveland, Miss., and practiced medicine there until his health forced him to retire several years ago.

Dr. Byrd served for a number of years as health officer in Coffee County.

He was a faithful member of the Baptist church and took an active part in the civic and social life of this section while living here, and in his adopted home in Mississippi.

Last November Dr. Byrd moved to Clio where he lived out his long and useful life.

Surviving are his widow, Mrs. Nannie Mae Snell Byrd of Clio; one daughter, Mrs. John S. Tillman of Clio; three sons, Dr. Herbert L. Byrd of St. Helena, Calif., B. L. Byrd, Jr., of Paducah, Ky., and Hon. David C. Byrd, an attorney of Washington, D. C., one brother, Hon. Major B. Byrd formerly of Dothan, now residing in Jacksonville, Fla., where he is a prominent attorney; five grandchildren and five great-grandchildren.

Dr. Byrd was a brother to the late H. D. Byrd and Jim Byrd and Mrs. Tom Ellis, all prominent Ozark citizens.

DR. HARLEY R. SHANDS

Dr. Harley Ropsenborough Shands, prominent Jackson physician, died March 17 at the age of 71.

Dr. Shands was born at Senatobia and was graduated from the University of Mississippi and Tulane University. His father was the late Lieut. Gov. Garvin Douglas Shands who served from 1882 to 1890. His father also formerly was dean of the Ole Miss Law School and professor at Tulane.

Dr. Shands opened his office in Jackson, June 1, 1905. He practiced alone until 1907 when he formed a partnership with Dr. J. F. Hunter, now dead. In 1910, although his partner was a Presbyterian and Dr. Shands a Methodist, the two partners gave their property on Manship and N. State to the Mississippi Baptists for the erection of a hospital.

Dr. Shands practiced with Dr. Hunter until 1917 when Dr. Shands became ill with tuberculosis and went West to regain his health. He settled in Colorado Springs, Colo., and formed a partnership.

He practiced in Colorado Springs in the summer and in Jackson in the winter until his cure was complete. In 1926, Dr. Shands became associated with Dr. Frank Hagaman, and in 1930, Dr. R. C. O'Ferrall joined the firm as a junior partner. The partnership was broken in 1939 by the death of Dr. Hagaman.

Later, when the partnership of Shands-O'Ferrall Clinic was formed, other doctors came into the firm.

The noted physician was a member of the American Medical Association, the Southern Medical Association, and served as president of the Mississippi State Medical Association in 1907.

He was a member of the American Board of Surgery; Mississippi's first member of the American College of Surgeons; a member of the Southeastern Surgical Society and a member of the Southern Surgical Association since 1914, serving as its vice-president in 1927.

Dr. Shands was a Methodist and a member of the Baptist Hospital staff. His death was the fourth among members of the medical corps there in the previous two weeks.

He leaves his wife; a daughter, Mrs. John Walsh of Jackson; two sons, Dr. H. C. Shands of Boston and Dr. W. C. Shands of Rochester, Minn.; a sister, Mrs. P. H. Saunders of New Orleans, and a brother, Dr. Hubert Shands of Hattiesburg.

DR. ROBERT GOING

Death came suddenly to Dr. Robert Going, seventy-six-year-old physician of Calhoun City, Miss., who suffered a coronary thrombosis.

Dr. Going was a graduate of Memphis Medical College, Memphis, Tenn., and was licensed to practice in Mississippi in 1902. He had practiced in Banner, Catchings and Brunswick, Miss., before moving to Calhoun City, where he located in 1931.

Woman's Auxiliary

IF YOU HAVEN'T OBSERVED DOCTOR'S DAY

Many of the auxiliaries over the state have had parties that are now annual observances, planned with the sole intent of honoring our doctors and increasing the professional fellowship.

If you let March 30 pass by without at least sending a carnation to the doctors in your society, it's not too late.

The president of the Auxiliary to the Southern Medical Auxiliary discovered the resolution which has become acceptable to most of the Southern states in setting March 30 as Doctor's Day: We pass on its fine text:

"Whereas, we are well informed about the histories of soldiers and sailors, kings and statesmen, inventors and discoverers, saints and craftsmen, but omit the struggles of the medical profession in their unwearied pace to make human living safe, which struggles have been a real force in shaping and changing civilization; and

"Whereas, these pursuers of Truth, the practitioners of the medical arts, have made valiant struggles and sacrifices for the defense of human living; now, therefore,

"Be It Resolved, by the Woman's Auxiliary to the Medical Association of Georgia, that March 30, the day that famous Georgian, Dr. Crawford W. Long, first used ether anesthesia in surgery, be adopted as Doctor's Day. The object to be the well being and honor of the profession, living and dead, and the study and commemoration of this promotion of health and happiness during the ages; the observance demanding some act of kindness, gift, or tribute."

INTERPRETING MEDICAL LITERATURE

VA CLINICAL PATHOLOGICAL CONFERENCE

February 28, 1952, 1:00 p.m.

PRESENTATION OF CASE

HISTORY: Patient, a 61-year-old colored plumber, was first admitted to the VA Hospital, Jackson, Mississippi, three years ago for low back pain and urinary symptoms present for a long period. Due to old injury the urethral orifice was of pin-point size resulting in bladder distenton, pyuria and azotemia. Meatotomy was performed and patient improved. During a later readmission infected teeth were extracted. The third admission was for complaints of burning urination and lower abdominal and back pain following prostate massage four weeks before. Nocturia one or two times had been present for years. Patient also had "gas on his stomach" for three months and vomited occasionally, but did not notice any blood. Since that time he had poor appetite and lost 15 to 20 lbs. He felt weak but continued to work.

PHYSICAL EXAMINATION: revealed a well developed and nourished colored man of 61 years who was not acutely ill. P 80, BP 110/70, T 100 degrees. Chest: Heart sounds low with questionable systolic murmur and extrasystoles; no cardiac enlargement. Lungs normal. Abdomen: no tenderness or rigidity; liver, spleen not palpable. Genitalia: deformity of glans, but adequate meatus. A catheter was passed and five ounces of cloudy residual urine obtained. Prostate slightly enlarged in superior region of right lobe with small area of induration; no particular tenderness. Physical examination otherwise irrelevant.

LABORATORY DATA: *Urine*: (4 examinations) Sp. Gr. fixed at 1.010; alkaline; sug. 0; alb. 2+; loaded wtih WBC, some in clumps, and few RBC, many gram-negative bacilli; *CBC*: RBC 3,850,000; Hb. 12gms, 75 per cent; WBC 26,200; Diff. polys 90, bands 2, lymphs 8; *chemistry*: BUN 27; Proteins, total 6.8, albumin 3.5, globulin 3.3; *Phosphatase*: acid, less than 0.1; alkaline 4.3 units; PSP 45 per cent dye excreted in 2 Hrs.; Cephalin flocc. 1+. — *Kahn* test negative. — *X-ray*: Chest: normal except for tortuosity of aorta. LS spine normal. BE: flattening of distal rectum, possibly due to pressure of extrinsic mass. Cholecystogram negative except for somewhat diminished gall bladder function. Upper GI series not satisfactory due to inability of pt. cooperate. Esophagus negative. Stomach: crescentic defect on lesser curvature with rigidity of adjacent walls which might be a malignant ulcer. Duodenal cap deformed suggesting ulcer. On re-examination the previously described ulcer-like defect was visualized radiographically, but could not be duplicated fluoroscopically. It was felt that the deformity represented a loop of duodenum superimposed on stomach. *EKG*: possible myocardial infarction; on repetition no definite infarction reported although anteroseptal infarct could not be ruled out.

COURSE: Patient's temperature was septic running up to 102.4 degrees daily, but remaining most of the time below 100 degrees. He was placed on bladder irrigations, penicillin parenterally and three days before death terramycin requiring occasional opiates and belladonna. Pt. seemed to lose strength gradually although he was able to take his diet and remained ambulatory up to a few days before death. He had episodes of severe gastric pain and hyperperistalsis relieved by belladonna. Two days before he died he had an episode of suprapubic and penile pain interpreted as bladder spasm due to indwelling catheter and infection. The night before his death he complained of almost constant epigastric pain which required opiates. In the morning his pulse and respiration were rapid, his blood pressure fell to shock levels and he expired within a short time on the 25th day of hospitalization.

ABSTRACT OF DISCUSSION

Dr. Floyd Davis thought that on the basis of history and clinical findings presence of a chronic urinary obstruction was certain presumably leading to pyelonephritis with hydronephrosis. Septic temperatures may have been due to such urinary infection or extension of the infection, e.g. a perinephritic abscess. The gastric signs pointed toward malignancy as indicated by X-ray findings and rapid downhill course. The sudden death with shock could have been of cardiac origin, possibly coronary disease suggested by EKG. Dr. S. A. Sabatini stressed that the upper abdominal symptoms overshadowed the urological condition, first suspected to be prostatic cancer. This, however, was not confirmed by laboratory and x-ray evidence. Also, the fact that the temperature did not return to normal after urinary drainage was established, spoke against a urologic cause of the fever. Dr. Rex Bolend considered the possibility of acute prostatitis or vesiculitis causing septic temperatures. Dr. Kenneth G.Grigsby pointed out that patient, in spite of drainage, continued to have pyuria indicating that pathology of the urinary tract other than simple obstruction was responsible. Dr. Leo Elson contended that the x-ray findings could not be relied on because no extrinsic mass pressing on the rectum was found by rectal examination nor were the stomach films conclusive proof of the ulcer. Dr. J. V. Cockrell thought that patient died of an abdominal catastrophe such as perforated appendix or ulcer, pancreatitis or mesenteric thrombosis, and reminded that classical signs of peritonitis in older individuals may be atypical or missing. Dr. J. F. Busey commented on the fact that the septic temperature was not influenced by antibiotics and may have been due to conditions other than infection. Hemorrhagic pancreatitis appeared a good possibility. Dr. Walter C. Earl thought of a dissecting aneurysm due to the repeated episodes of severe pain.

ANATOMIC DIAGNOSIS

(Dr. H. N. Naumann)

1. Gastric ulcer, large (8 x 7 cm.), benign, perforated; erosion of pancreas; peritonitis, generalized. (3000 cc. of exudate).
2. Carcinoma of bladder, extensive; metastases to peritoneum, diffuse, massive.
3. Obstruction of ureters; hydronephrosis and pyelonephritis, bilateral; hypernephroma, small, left.

Etiology and Treatment of Prolonged Labor*

Richard D. Bryant, M.D.
Cincinnati, Ohio

LABOR WILL BE used to denote uterine contractions which bring about changes in the cervix which permit expulsion of uterine contents through it. These changes consist of effacement and dilatation.

The term prolonged labor implies labor longer than usual or normal or average. This immediately raises the question "What is the usual or normal or average length of labor?" If you will think about it a moment, you will observe that it is extremely difficult even to define the normal length of labor. Strictly speaking, it implies a labor which proceeds without any interference, medication, operative termination, etc. The problem is so complex it is doubtful if a universally acceptable answer will be forthcoming from any modern study of the problem. An indication of this is the fact that the same figures on the length of labor are used in Williams 2nd edition (1908) as in Eastman's edition of the same book (1950), the 10th edition.

So without having any very clear picture of what the normal length of labor is, for the purpose of this discussion prolonged labor will be used in the sense of painful uterine contractions occurring more frequently than every ten minutes, resulting in typical cervical changes, but not producing full dilatation within 24 hours, since it is obvious that prolongation of labor is chiefly prolongation of the first stage.

For practical purposes it is not unusual to consider only the time in the hospital, and to feel that prolonged labor is definitely present if full dilatation is not reached by the second morning in the hospital. It has been shown rather conclusively that undue prolongation of labor causes progressively increasing rates of fetal mortality and maternal morbidity. It has been taught generally that young and elderly primiparas are especially subject to prolonged labor. It is now felt that the young primipara has a normal or rapid labor. The incidence of prolonged labor among elderly primiparas may be increased, but not significantly.

There are two conditions when prolonged labor may be considered normal. The first of these is when the uterus and baby are normal and progress is slow but continuous. The pains are adequate and regular, but never get very close together. The baby's condition remains good, and the mother shows no signs of exhaustion. The cervix remains soft and succulent. In other words all circumstances are normal, except the rate of progress is slower than average. In these cases the outcome is invariably satisfactory and labor usually terminates within 36 hours of the onset.

The second type of case is that in which labor begins before the cervix is ready, that is before there is much insensible effacement. This is fairly common in premature labor, and not infrequent even at term. Labor may be in progress for 24 hours or more without any change in dilatation, but with obvious effacement. After effacement is complete, dilatation may proceed very rapidly — often going from one finger or 2 cm. to full dilatation in two or three hours, even in primiparas. The apparent explanation in these cases is that with the aid of the uterine contractions, effacement is achieved in a relatively few hours, where normally it takes place insensibly over a period of days or weeks. One of the dangers of inducing labor by the artificial rupture of the membranes is that the cervix may not be effaced or ready to be and that so long a period of time elapses before effacement and dilatation is complete that infection may occur, or the baby may suffer from the prolonged exposure to the uterine contractions.

Abnormal prolonged labor is by definition failure of the cervix to become fully dilated within 24 hours. The causes of this failure may be in the cervix itself, or in the uterine contractions. There is considerable disagreement as to whether a third factor — the presenting part — is of great significance.

Cervical causes for prolonged labor can be classed as organic and functional. The functional causes are commonest in first labors, and are evidenced by failure to dilate even after complete effacement. In such cases, after hours of labor, the cervix is represented only by an extremely thin layer of tissue, with the os a bare finger tip dilated. Clinically the edge of the os is felt to be tough and rigid, but readily yields if the finger is forced through the opening. Progress to full dilatation is often extremely rapid after this maneuver. Similar difficulty usually does not appear with subsequent pregnancies.

---

* Delivered at the sixty-third annual session of the Mid-South Postgraduate Medical Assembly, February 12 - 15, 1952.

Another type of functional prolonged labor due to cervical causes is occasionally seen. This also usually occurs in primiparas and is characterized by an abnormally long lower uterine segment even before labor begins. The head is frequently extremely low, almost on the perineum, but cervical dilatation occurs very slowly, apparently because of the mechanical disadvantage presented by the long thin lower uterine segment.

Organic deformities of the cervix which may lead to prolonged labor are usually due to the replacement of the normal cervical tissues by tough scar tissue. This may follow tears acquired at previous deliveries, over-enthusiastic cauterization of the cervix, or operations on the cervix. Occasionally, in neglected cases, carcinoma is discovered to be preventing dilatation. Infections of the cervix may render the cervix tough and inelastic. Fine bands of adhesions are sometimes found in the canal. Breaking these up with the finger frequently is followed by rapid dilation, where progress had been absent previously. In times past, syphilitic scarring occasionally caused trouble.

A fairly common type of case is that in which an apparently normal cervix dilates normally until four or four and a half fingers (8 or 9 cm.) is reached, then all progress ceases, the cervix then becoming oedematous and tough, even in the presence of what appear clinically to be good uterine contractions. The term cervical dystocia has been applied to this type of obstruction, although its existence is denied by some authorities.

Uterine causes for prolonged labor may also be classified as organic and functional. The organic causes are the less common. Multiple intramural fibroids may so distort the normal arrangement of uterine muscle fibers that they are unable to contract in a coordinated purposeful manner — as a result labor is unduly prolonged.

When congenital anomalies are present, such as uterus didelphys and lesser degrees of failure of union of the Mullerian ducts, uterine development may be so abnormal that the distribution of muscle fibers makes for inefficient contractions. Genital hypoplasia associated with hypopituitaryism as in dystrophia dystocia syndrome (D.D.S.) is probably another example.

Repeated childbirth usually leads to fibrotic changes in the uterus, so that the proportion of actual muscle to fibrous tissues is much diminished. This again may lead to inefficient uterine contractions.

Probably the commonest cause of prolonged labor is functional — the lack of the "gradient of diminishing physiologic activity from the fundus to the lower uterine segment" of Reynolds and his co-authors. Their findings, as determined by the strain gauge multichannel tokodynamometer, suggest that in normal labor the strength of each uterine contraction is greatest near the fundus and least in the lower uterine segment. The more nearly the strength of the contraction in the lower uterine segment approaches that in the fundus, the more ineffective the contractions are in producing cervical dilatation. Why the diminished gradient is absent in some uteri is not known.

Contraction rings are an uncommon cause of prolonged labor. A contraction ring is merely a ring-like transverse thickening of the uterine wall which projects into the uterine cavity, usually at the level of the baby's neck. With each contraction it tightens, and both prevents the forcing of the baby downward, and retraction of the lower uterine segment upward, so that no progress is made. A similar type of obstruction occurs when there is an excessively long interval between rupture of the membranes and the onset of labor. In this latter case the uterus fits so snugly over the whole child, conforming to all the irregularities of the child's body to such a degree that the harder the uterus contracts the more firmly the child is held by the snug-fitting uterus.

Uterine contractions may be abnormally weak, short in duration and of little intensity, although the interval between pains may be normal. The best clinical test for this is that of pressing a finger on the fundus at the height of a contraction.If it can be indented, the contraction is not good. Labor will necessarily be prolonged since the energy expended with each pain is so small that a longer total time is required to accomplish dilatation. The uterus overdistended by hydramnios or multiple pregnancy may contract poorly because its walls are stretched so thin.

Psychic influences are said to lengthen labor — fear, uncertainty, anxiety, excessive concern for the fate of the baby, etc. While it is logical to assume this is so, it has not been proved.

Drugs used for the relief of pain may in a few cases prolong labor although I believe this to be uncommon. When this is apparently so, it is likely that the contractions are weak to begin with, that the patient is abnormally susceptible to the drugs used, or that an excessive amount of drug is being used.

The influence of disproportion or malposition on cervical dilatation is difficult for me to understand. Full dilatation can and does occur with either, yet often does not. It is conceivable that if the presenting part fits too snugly against the bony pelvis, the cervix and lower uterine segment are pinched between the two. Then the harder the uterus drives the baby downward, the tighter the soft parts are held, effectively preventing dilatation. Almost any other explanation involves reasons for the prolongation which have already been given. While it is often taught that occiput posterior positions cause prolonged labor, it is questionable if this is so. Posterior position may be due to variation in pelvic architecture, to the angle between the pelvic inlet and the spine, or the relationship of the long axis of the uterus to the pelvic inlet. It is probable that in a good many women in whom prolonged labor is associated with occiput posteriors the labor would have been even longer had anterior positions been present.

Accurate prediction of prolonged labor late in pregnancy or early in labor is almost impossible. My own batting average is so poor as to be completely unreliable.

As it becomes evident that prolonged labor is going to occur, it is wise to prepare the patient for it. This involves adequate fluids, rest, encouragement and prophylaxis against infection. Actual nutrition is of relatively secondary importance.

Re-evaluation of all factors concerned is vital when it becomes evident that the labor is going to be prolonged. The type and frequency of contractions, presentation and position, cephalo-pelvic relationship, state of the membranes, condition of mother and baby, and above all the condition of the cervix as determined by vaginal examination should be reviewed. X-rays may be, but are not necessarily, indicated.

Treatment of course depends on the cause of the prolonged labor, and the technical and professional facilities available. The decision as to what to do taxes the most skilled — and what is or isn't done will no doubt be criticized. The actual procedures available usually include:

1. Expectancy, with or without drug-induced rest periods.
2. Stimulation with enemas or castor oil.
3. Rupture of membranes.
4. Forceps delivery after either Duhrssen's incisions or forcing the cervical rim back over the head.
5. Stimulation with posterior pituitary.
6. Version and extraction (of which I do not approve).
7. Cesarean section.

The value of stimulation with calcium, quinine, or estrogenic substance, or relaxation of the cervix with syntropan or similar drugs, seems to me to be insufficiently proved, although these are probably harmless.

Paradoxically, probably the simplest and commonest form of treatment is expectant. The patient is supported by fluids and antibiotics, and the outcome is awaited. The total length of time from the onset of labor to delivery can often actually be lengthened profitably by deliberately administering a drug, such as morphine, which will slow or stop the contractions entirely. The loss of time is more than compensated for by the rest which the patient derives from this treatment. The hope is that after the rest period, the uterine contractions will resume with greater effectiveness, and that labor will shortly terminate. While this method of treatment is often effective, just as often it is disappointing, and I am convinced should not be repeated over and over again.

In spite of lack of adequate scientific proof as to their effectiveness, I believe that an ounce of castor oil by mouth, or an enema, will in many cases act as effective oxytocics. In any case little is lost by the treatment, for it does not preclude the employment of some other method of treatment at a later time.

Artificial rupture of the membranes is indicated in most cases of prolonged labor, provided the presenting part is engaged, and the cervix is at least three fingers or 6 cm. dilated. The exact mode of action of this maneuver is not known, but there is no doubt as to its efficiency in many cases. It does not make other therapy impossible. In those cases in which it is not effective, it is probable that progress would have been no better had the membranes been left intact.

Probably the most common unanticipated type of prolonged labor occurs when dilatation proceeds at a reasonably normal rate until the cervix is 4 or 4½ fingers (8 or 9 cm.) dilated, then all progress ceases. In a sense these are the most difficult cases to treat, in that victory is so close and yet so far away. There is no safe and effective method of dilating a cervix mechanically. We too often have forgotten that dilatation of the cervix does not correspond to the opening of any other body portal. Dilatation of the cervix is accomplished by pulling the cervical tissue upward — and mere stretching of the cervix cannot accomplish this. Thus manually forcing the cervix open is not only not called for, but is actually contraindicated. I believe it is better when proper conditions are present — thin cervix, at least 4 fingers dilatation, vertex presentation well below midpelvis — to perform Duhrssen's incisions at 10, 2 and 6, or at 9, 3 and 6, under direct vision. This is followed by immediate forceps delivery.

In many cases when the occiput is posterior, and only a rim of cervix remains, this rim disappears after forward rotation of the occiput. If an actual measurement of the cervical opening could be made in these cases, it would be found that full dilatation — that is, dilatation great enough to allow the passage of the suboccipito bregmatic diameter of the fetal head — is present, but that the excessive dilatation needed to permit passage of the occiputo frontal diameter has not been achieved. In this respect a rim of cervix has an entirely different significance in anterior positions and posterior ones.

Posterior pituitary extract, particularly pitocin, is probably more effective in preventing prolonged labor than in treating it, that is, it works better early than late. It should be used with extreme caution, and only under the closest of supervision. Hypodermically, the initial dose shoulld not exceed 0.1 cc. and ether should be available to slow the contractions if they become too violent. When given intravenously diluted 1 to 1000, the effect is more readily controllable.

Version and extraction is rarely advised. More often than not the amniotic fluid is gone, and the uterus fits snugly about the baby. The deep anesthesia required is a potent factor in postpartum hemorrhage.

Cesarean section — low cervical, extraperitoneal, or Porro — may in the long run be preferable to a difficult forceps delivery. I do not believe it should be looked upon as an admission of defeat for the obstetrician.

Preparation for repair of cervical and vaginal lacerations, or incisions, should be made beforehand. Fluids and blood should be available. Prophylaxis against infection should be continued for several days after delivery. It should be impressed on the patient that similar prolongation of labor is unlikely to occur in subsequent pregnancies.

The baby needs special attention. It is often in shock-like state, and gently stripping the cord blood into the baby's body may speed its recovery. Warmth, gentle handling and rest are helpful. Special care should be taken to clear the air passages as the amniotic fluid is often meconium-stained, thick and tenacious. Antibiotics should be given routinely to the baby to prevent or cure pneumonia.

There are a number of generalizations which can be made about the problem as a whole — 1. Voluntary bearing down efforts are absolutely contraindicated until full dilatation is achieved. It is not only ineffective but is positively harmful. 2. Every patient in prolonged labor should have at least one sterile vaginal examination, and subsequent ones may be necessary. 3. High forceps are never indicated. 4. Mid-forceps should be employed only as a last resort. The permanent disability due to torn pelvic muscles and fascia with the associated weakening of bladder and rectal supports are too high a price to pay for proving that you can deliver the patient per vaginum. 5. Adequate muscular relaxations are necessary for a difficult delivery. Ether is a satisfactory anesthetic, although saddle block is better. 6. In the past it was sometimes thought that the loss of the first child of a young primigravida was unfortunate but not too serious — that she could have other children later. I should like to express my unqualified disapproval of any such attitude. We are **not** justified in subjecting any baby to **any** procedure which may interfere with its later development or even cost it its life, if there is some reasonable alternative to such procedure. 7. The late sequelae in babies born after very long labors and difficult deliveries are a subject that has been studied insufficiently. I suspect that too often obstetrical triumphs result in developmental failures. There is a crying need for thorough investigation of this aspect of obstetrics.

In conclusion, prolonged labor is one of the commonest serious problems facing the obstetrician. Any solution must be based on adequate answers to the five W's — who, what, when, where, why. WHO is qualified to perform whatever procedure is necessary will depend on the professional aid available. WHAT is to be done depends on the cause of the difficulty, and in any case must be one or more of the procedures previously mentioned:

1. Supportive treatment with or without rest periods.
2. Stimulation of uterine contractions.
3. Artificial rupture of the membranes.
4. Forceps delivery.
5. Version and extraction.
6. Cesarean section.

WHEN to carry out any of the above is almost as important as what to do. WHERE delivery can be effected is of concern chiefly if delivery was originally planned for the home. The facilities of a hospital are of vital necessity in difficult deliveries. The answer to WHY any particular manoeuver is resorted to should always be in the interest of the mother or baby or both, never that it is more **convenient** to do this or that, or that the family feels that something should be done.

2500 Melrose Avenue
Cincinnati, Ohio

Esophageal Diverticula

Rush E. Netterville, M.D., F.A.C.S.
E. J. Harris, M.D.*
Jackson, Miss.

IT IS THE PURPOSE of this communication to review the subject of esophageal diverticula, to report twenty-three additional cases, and to give a detailed report of one case of a large pulsion diverticulum of the lower third of the thoracic esophagus which was surgically handled.

An esophageal diverticulum is an out-pouching which develops from the lining wall of the esophagus and is composed of one or more layers of this organ. Diverticula may occur singly or in multiple form, and if multiple they may be located in other parts of the gastrointestinal tract as well as in the esophagus.

Most authors classify diverticula on an etiological basis, in two forms—the pulsion and the traction. In the pulsion type, a weakened portion of wall is forced outward by pressure created within the lumen, usually during the stage of muscular contraction.[8] The out-pouching may be formed either by layers of the wall of the organ or by protrusions of the mucosa and sub-mucosa through a weakened area in the muscle, such as a site through which the vessels and nerves enter the organ. The pulsion form of esophageal diverticulum is most commonly seen at the pharyngo-esophageal junction. (See Figures 1 and 2.) It has been postulated that the reason for this constant pressure of the larynx against the anterior borders of the cervical vertebral bodies causing thinning out of the fibers of the crico-pharyngeus muscle, thus giving a weakened area.[3,7] Large pulsion diverticula of the thoracic esophagus characteristically occur in people past middle life[4] at a time when the musculature in general is flabby, flexible, and may give way at certain points.[7] Hasty eating

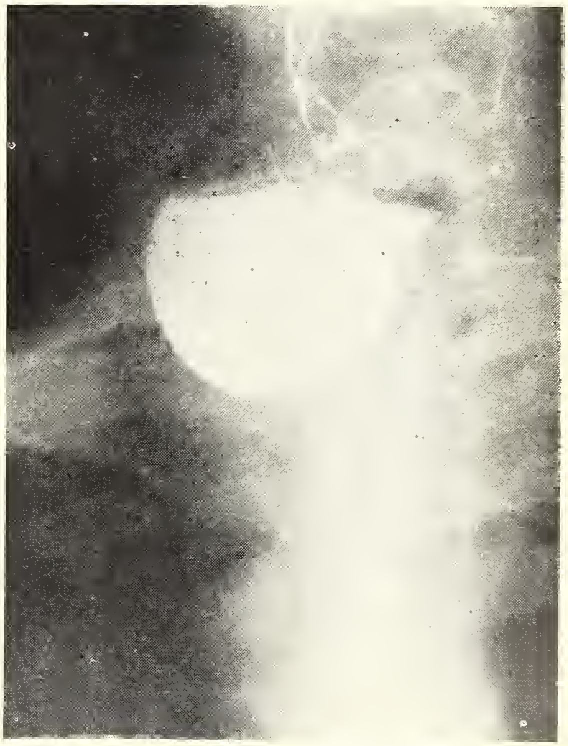


Figure 1. In the AP view, barium is seen collected in a large diverticulum arising in the pharyngo-esophageal region and presenting inferiorly and to the left.

---

* Radiologist, Mississippi Baptist Hospital

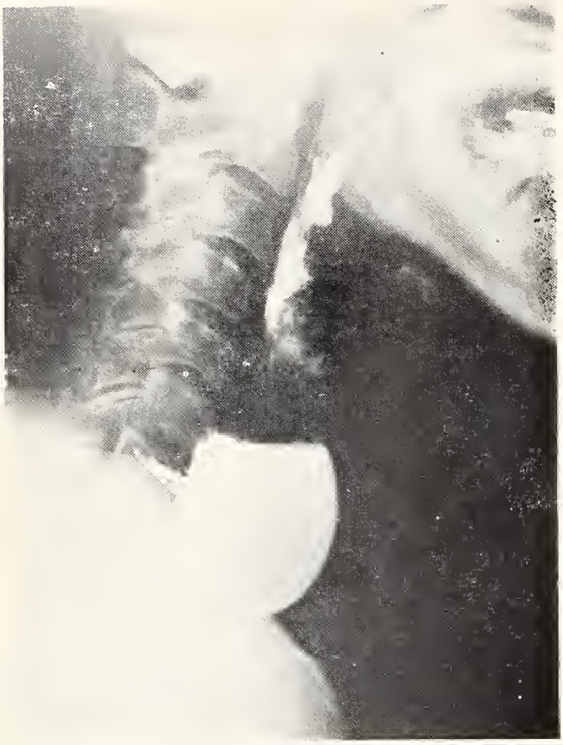


Figure 2. Lateral view of same patient as in Fig. 1.

and the swallowing of large boluses of food may cause sufficient intra-esophageal pressure to produce an out-pouching at one point.

The traction form of diverticulum is caused by adhesions fixing a portion of the esophageal wall and causing an out-pouching either by fixing the wall, holding it out when the organ contracts, or by pulling out the wall as the aging scar tissue contracts. In the early stages the apex of the pouch is usually pointed instead of rounded as in the pulsion type. The traction form is observed most commonly along the anterior surface of the esophagus adjacent to the tracheobronchial glands. (See Figure 3.)

It is said also that there may be a combination of the pulsion and traction forms. After the traction type once originates, pulsion may play a major role in enlarging the diverticulum. The apex becomes rounded and as the diverticulum becomes larger the muscular wall thins out and undergoes atrophy. It is not always possible to determine the exact mode of origin at pathologic or roentgenologic examination.

In our series of twenty-three cases, sixteen were fifty years of age or over. The youngest was nineteen years of age, this patient having a traction diverticulum of the mid-thoracic esophagus. Thirteen of the cases were males, while ten were females. This is somewhat in variance to the report in the literature that pulsion diverticula are usually four times as frequent in the male as in the female.[3] Seventeen of our patients were white while six were colored. As far as type is concerned, fourteen were pulsion, six traction, and three apparently combination. Seven were located at the pharyngo-esophageal region, ten in the mid-thoracic region, and six in the lower thoracic region. As far as size is concerned, fourteen of our cases were larger than two centimeters in diameter, while nine were smaller. Seven of our cases were symptomatic while sixteen were merely found on routine roentgen examinations and were asymptomatic cases. Of our series, four were operated upon by various surgeons at this institution.

Symptomatology of the esophageal diverticulum is: difficulty in swallowing, regurgitation of food, sour odor to breath, and chronic cough. The patient with a cervical diverticulum sometimes complains of a bubbling sensation on swallowing. This is due to the accumulation of air within the diverticulum during the act of swallowing. In cases of large diverticula of the esophagus, a severe cough which keeps

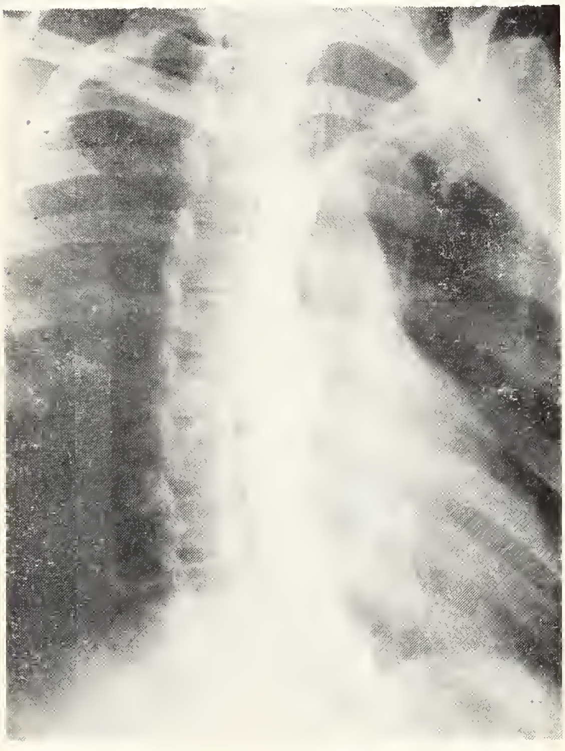


Figure 3. Note the calcium adjacent to the diverticulum, this apparently being within a node adherent to the esophagus and causing traction.

the patient awake at night becomes one of the most annoying symptoms. Regurgitation of the contents of the diverticulum usually relieves this attack and the patient is able to rest the remainder of the night. The diagnosis can usually be suspected by a typical history and confirmed by both radiologic findings and esophagoscopy. In cases of cervical diverticula a gurgling sound can often be produced by having the patient swallow and then compressing the area of the diverticulum. (Boyce sign.)[5] This sign is pathognomonic for esophageal diverticula.

The presence of an esophageal diverticulum may be suspected upon a study of plain chest films. (See following case report.) When a rounded shadow of increased density is seen with a gas fluid level in the region of the esophagus, it cannot be determined from plain film findings alone whether the shadow is caused by the presence of an esophageal diverticulum, an abscess, a fluid-filled cyst connecting with a bronchus, or sometimes even a hiatus hernia. When an esophageal diverticulum is suspected, the esophagus should be examined fluoroscopically following a swallow of barium with the patient both in standing and in horizontal positions preferably. Either thick or thin barium may be used, but the patient should be rotated through various degrees of obliquity. Muller and Valsalva maneuvers[11] are helpful in keeping the barium from passing through the esophagus too rapidly. Diverticula are seen best generally with the patient horizontal, for in the standing position the barium may slide by the mouth of the diverticulum without entering the pouch, or may remain in the diverticulum such a short period of time that it is easily overlooked. Folds are seldom seen within an esophageal diverticulum. The mucosal surface is usually seen only after the walls are coated with barium and the pouch distended with air. With contraction of that portion of the esophagus from which the diverticulum springs, the out-pouching may either increase or decrease in size depending upon the presence or absence of muscle in the wall of the diverticulum. Once a diverticulum has been seen fluoroscopically, films should be made in the optimum position for demonstrating the lesion.

It is felt that large pulsion diverticula which are definitely symtomatic should be treated surgically. The advent of antibiotics, improved surgical technique, and better anesthesia have greatly changed esophageal surgery within the last ten years. Infection no longer presents the many complications in esophageal surgery that it once did. Esophageal lesions can now be resected and the continuity of the gastro-intestinal tract restored with a minimum of risk. The multistage procedures and the invagination operation for esophageal diverticula, the diverticulo-gastrostomy, and the diverticulopexy for pulsion diverticula of the thoracic esophagus, and other procedures formerly used have largely been replaced by a one-stage resection of the diverticulum.[1,2]

There is an associated cardiospasm in about 50 per cent of the cases of pulsion diverticula of the lower esophagus.[2,9,10,12] If there is cardiospasm, a resection of the cardia and lower esophagus should be performed and an esophago-gastric anastomosis made above the former site of the diverticulum.[2]

CASE REPORT

J.F.P., white male, age 66 years, was first seen as an out patient January 1, 1951. He stated that he had had pain in the right lower chest for about four years. At first he was treated by his family physician for gall bladder disease. During the past year he experienced difficulty in swallowing, regurgitation of food previously eaten, and after lying down at night he often developed a strangling sensation.

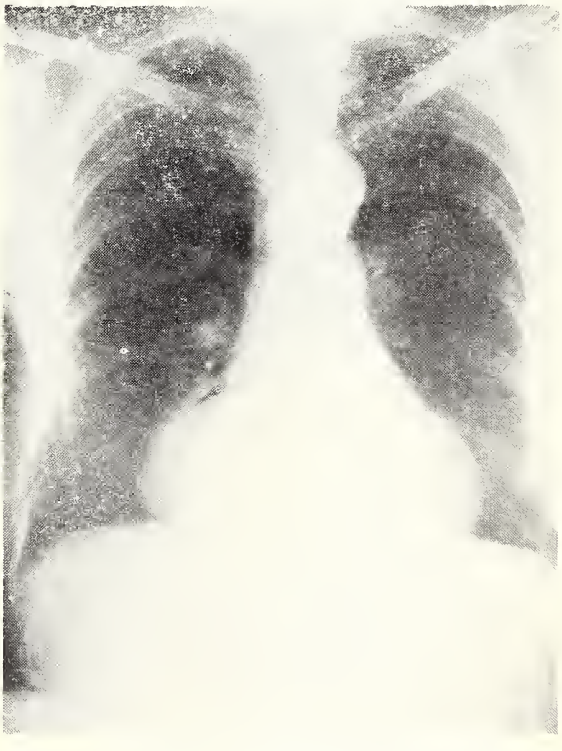


Figure 4. A PA film of the chest demonstrates a large mass filling the right cardiophrenic sinus and containing a gas-fluid level.

This was associated with a severe cough. The cough was usually relieved by regurgitation of food. His condition had grown progressively worse and the patient had been unable to perform his duties as a farmer during the previous six months. During this time he had lost approximately forty pounds in weight.

Physical examination was not unusual. The patient was well developed except for an exaggeration of dorsal kyphosis, but was poorly nourished. There was no evidence of pulmonary infection. The urinalysis revealed a specific gravity of 1.014, albumin negative, sugar negative, microscopic negative. His blood count was as follows: RBC, 3,240,000; hemoglobin, 10 grams or 67 per cent; white blood count, 4800.

Examination of films of the chest in PA and right lateral projections disclosed the presence of a rounded shadow of increased density presenting in the right cardiophrenic sinus, measuring approximately 11 cms. in diameter and containing an air fluid level. It was felt that this shadow could represent an abscess or a bronchogenic cyst connecting with the bronchus, a large esophageal diverticulum, or possibly a hiatus hernia. (See figures 4 and 5.) Follow-up study following the ingestion of barium disclosed that the mass was definitely an esophageal diverticulum. (See figure 6.)

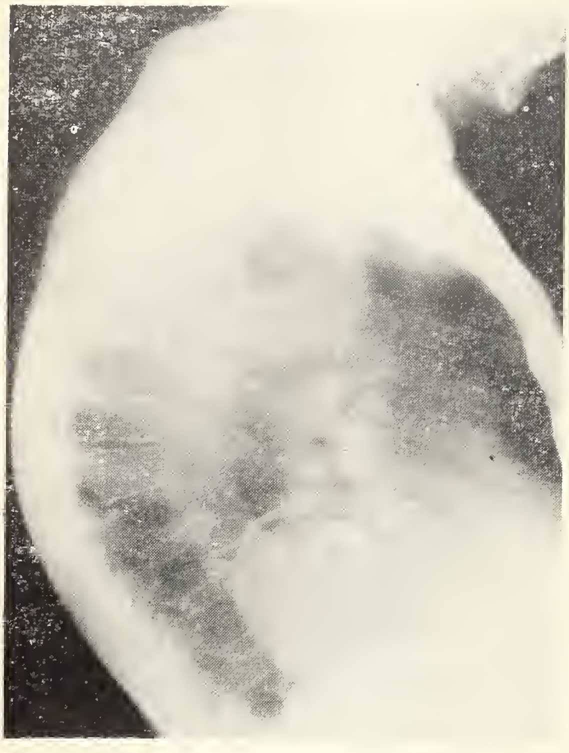


Figure 5. In the lateral film the shadow is seen to lie slightly posteriorly. Note the proximity to the heart.

Following admission to the Mississippi Baptist Hospital on February 28, 1951, the patient was started on procaine penicillin. A transfusion of 500 c.c. of citrated blood was given on March 1, 1951. The patient was kept on a liquid diet for two days before surgery. A gastric lavage was performed immediately before surgery and the stomach tube was left in place.

The operation was performed by one of us (REN) under endotracheal anesthesia on March 2, 1951. The left lateral position was used and the right pleural cavity was entered through the bed of the 9th rib. A large mass about three and one-half inches in diameter was found presenting in the inferior pulmonary ligament. The mediastinal pleura was opened and a diverticulum was found to be covered by a thick layer of fibrous tissue. This layer was incised and the diverticulum was freed throughout its entire circumference. The neck was found to be about 2 inches long and extended along the axis of the esophagus. A stay suture was placed in the upper end and lower end of the neck. An incision was then made across the neck of the sac through the muscular and mucosal layers. Care was taken not to sacrifice too much of either layer. It is known that a stricture might result at this site following the removal of either too much of the musculature or of the mucosa. The muscle layer had a tendency to retract after being cut. The mucosa was then approximated with interrupted 000 catgut sutures and the muscle layer was approximated with interrupted 000 silk sutures. The anterior pleural flap was then sutured over the suture line in such a fashion that the mediastinum was left open, thus permitting any drainage that might occur to escape into the right pleural cavity. A catheter drain was left in the tenth intercostal space. Penicillin, 200,000 units; and streptomycin, grams 1, dissolved in 20 c.c. of normal saline, was then instilled into the right pleural cavity and mediastinal wound. The chest was closed in a routine fashion using silk throughout. During the operation the patient received 2,000 c.c. of citrated blood. His condition was good at the end of the operation.

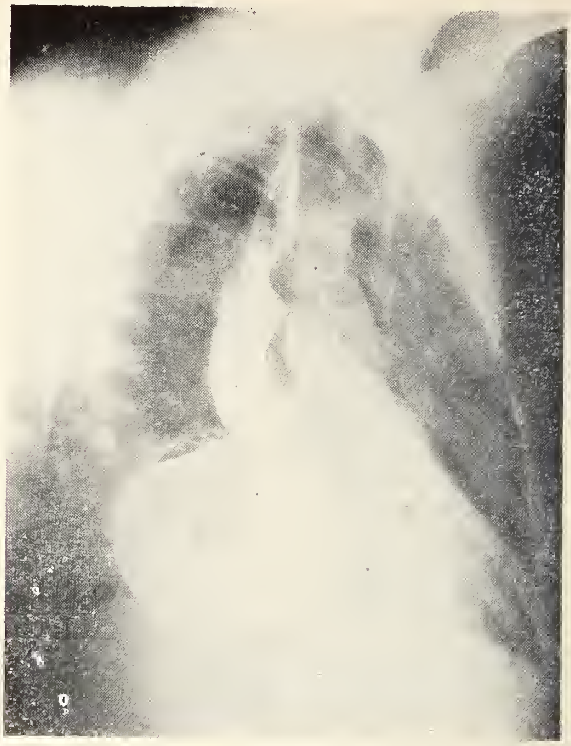


Figure 6. Barium flowed into the large pulsion diverticulum demonstrated above before passing on into the esophagus distal to it.

On return to the ward the drainage tube was connected to the water trap and the Levine tube was connected to Wangensteen suction. The patient was given intravenous fluids for the first 48 hours and then gastrostomy feeding was started. The stomach tube was removed and a liquid diet was ordered on the fourth post-operative day. The patient was able to take a soft diet by the ninth post-operative day. He was discharged ambulatory on March 15, 1951 and his wound was well healed at that time. His pre-operative symptoms of difficulty in swallowing, regurgitation of food, and coughing were relieved. He gained 42 pounds during the next five months (from 103 pounds to 145 pounds). At that time he stated that he felt better than he had felt in 30 years.

Follow-up fluoroscopic and radiographic examination of the esophagus with barium disclosed no defects and peristaltic waves were seen to pass normally through the esophagus. For practical purposes the esophagus appeared normal with no gross post-surgical changes being evident. (See Figure 7.)

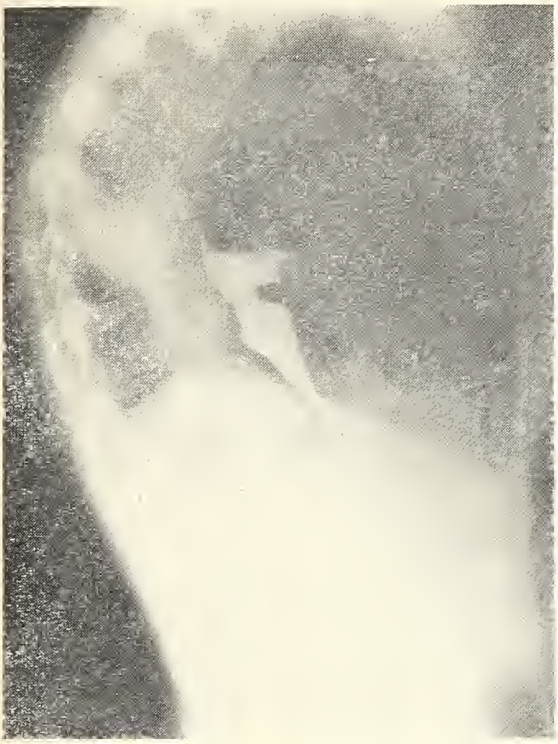


Figure 7. The above film demonstrates the lower one-half of the thoracic esophagus twelve days subsequent to surgery. There was no delay in the passage of barium and flexibility was present.

Although the patient was doing well in every repect post-operatively from a medical standpoint, he ended his own life about six months after the operation. It is understood that family difficulties were responsible for his taking this action.

SUMMARY

1. Esophageal diverticula in general have been discussed briefly.

2. Twenty-three cases of esophageal diverticula which have been studied at the Mississippi Baptist Hospital in the last five years have been presented.

3. A detailed case report of a large pulsion diverticulum of the lower third of the thoracic esophagus, surgically corrected, has been discussed.

BIBLIOGRAPHY

1. Adams, Herbert D., Diverticula of the Thoracic Esophagus, J. Thoracic Surg. 17: 639-645, (October) 1948.

2. Adams, Herbert D., Surgical Management of Obstructing Lesions of the Esophagus, Post-graduate Medicine 10: 6-14 (July) 1951.

3. Ahlquist, Richard F., and Kepl. Maxwell F., Esophageal Diverticula. Northwest Medicine, 47: 493-469 (1949).

4. Harrington, Stuart W., Surgical Treatment of Pulsion Diverticula of Thoracic Esophagus, Ann. Surg. 129: 606-618 (May) 1949.

5. Jackson, Chevalier and Jackson, Chevalier L., Bronchoesophagoscopy, Philadelphia and London, 1950, W. B. Saunders Co.

6. Janes, Robert M., Diverticulum of Lower Thoracic Esophagus, Ann. Surg. 124: 37-652 (October) 1946.

7. King, Bien T., New Concepts of the Etiology and Treatment of Diverticula of the Esophagus, S. G. & O. 85: 93-97 (July) 1947.

8. Nash, Emile C. and Palmer, Lincoln, The Clinical Signaficance of Diverticulum including Diverticulitis of the Gastrointestinal Tract. Annals of Int. Med. 27: 41-61 (July) 1947.

9. Poppe, J. Karl, and Berg, Ralph, Epiphrenic Esophageal Diverticulum Associated with Cardiospasm. Surgery 25: 231-236, 1949.

10. Raven, R. W., Diverticula of the Pharynx and Esophagus, Lancet 1: 1011 (1933).

11. Templeton, Frederick E., X-Ray Examination of the Stomach, Chicago, 1947, The University of Chicago.

12. Vinson, Porter P.: Diverticula of the Thoracic Portion of the Esophagus, Report of 42 Cases, Arch. Otolargngology 19: 508-513, 1934.

A TOAST TO GRANDPA

Here's a health to Grandpa
And may the Grandson be
As fine a grown-up fellow
In every way, as he.

May each succeeding grandson
Possess his wit and worth
And prove a benediction
To all his bit of earth.

Here's a health to Grandpa
And may his tribe increase,
With more of joy with every boy
With health and wealth and peace.

David E. Guyton
Blue Mountain, Mississippi

Otolaryngology for the General Practitioner*

O. E. Van Alyea, M.D.
Chicago, Ill.

PROGRESS IN MEDICINE has always been steady and certain but slow except on the occasion of the introduction of some valuable new diagnostic or therapeutic agent and then the changes become sudden, startling and revolutionary.

In otolaryngology, such a change occurred in 1884 when the discovery of cocaine ushered in the specialty of rhinology by making possible painless intranasal procedures. Most of the procedures devised then have been revised and many new ones have been introduced, but cocaine is still the most valuable drug available to the rhinologist.

THE ANTIMICROBIAL AGENTS

In modern times a similar abrupt revision of our therapeutic measures occurred with the introduction of the new antimicrobial agents. The first major effects observed in clinical otolaryngology with chemotherapy was the elimination of most of the acute surgical procedures and since then miraculous cures have been reported in the more serious complications of all types of infections including cases of cavernous sinus thrombosis, a disease which formerly carried a 100 per cent mortality tag.

Along with the glowing reports of the achievements of the new antimicrobial preparations, come reminders of their occasional toxic effects, the seriousness of their masking tendencies and the realization that strains of bacteria develop which become more and more resistant to them.

Despite these drawbacks, the antibiotics are widely and effectively used in the field of infections with penicillin by parenteral administration, the drug of choice against most of the gram-positive organisms.

It has been fairly well established that the drug is of very little value when applied locally to the nose or throat, and that in the form of drops, lozenges or mist, the toxic reactions more than offset any good that may be derived.

The great fault of many physicians is that they expect too much from use of the antibiotics in simple cases, such as the common cold, and other mild uncomplicated infections of the nose and throat. The drugs often are given as the sole measure of therapy with complete disregard for the other standard forms of treatment. Because of this, complications occasionally develop and the disease tends to persist until the patient is placed under proper management. Cases of "frozen" sinusitis are commonly encountered by the otolaryngologist and characteristic of the history is several days or weeks of antibiotic therapy. Various combinations of these preparations undoubtedly have been tried in the case but all have failed because there is nothing in these conmpounds to produce drainage from closed off suppurating cavities. Proper treatment of these cases consists of the establishment of drainage from the sinuses and the discontinuance of the drugs.

Also observed not infrequently is the aureomycin "red throat." In certain individuals the palate, pharynx, and tongue assume a characteristic red hue and the throat becomes painful after one or two days intake of the drug. In the more severe reactions one may even observe uvular and laryngeal edema. The condition clears up with withdrawal of the aureomycin. A similar reaction follows the use of penicillin troches or lozenges and the treatment is the same.

The sulfa drugs have fallen somewhat into disuse since the more powerful and less dangerous antibiotics have become available, yet, their potential value should not be overlooked. They are preferable to the antibiotics in the treatment of the ordinary sore throat or tonsillitis when administered in the form of tablets known as dulcets which dissolve in the mouth. In this manner the action is dual, local and systemic, and the desired improvement is gained within a day or two. Sulfadiazine grains V is the compound of choice although some prepared tablets contain also sulfamerzine and sulfamethazine.

As previously stated the great value of the antimicrobial agents is in those grave conditions in which formerly there was a high mortality rate. Otolaryngologists commonly refrain from their adoption in minor ailments which respond satisfactorily to other well established forms of therapy. This not only is because of the questionable aid to be gained by the antibiotics, but because they fear the masking effects likely to be produced and because they prefer to hold in reserve those valuable agents against the development of complications when their use will be more greatly appreciated.

---

* Delivered before the sixty-third annual session of the Mid-South Postgraduate Medical Assembly, Feb. 12-15, 1952, Memphis, Tenn.

CASE REPORTS

Case 1

A 5-year-old boy appeared at the outpatient department of the Research and Educational Hospitals at 5 p.m., April, 1946. His mother who accompanied him stated that he had developed an acute head cold that day and swelling occurred about the right eye in the afternoon.

The boy was acutely ill with a temperature of 102 degrees F. The orbital tissues were extensively inflamed with swelling and tenderness around the orbit extending to the temple. An x-ray taken immediately showed a cloudiness of both anterior ethmoids. The boy was admitted to the hospital and given 25,000 units of penicillin every three hours. No other treatment was administered except the application of heat externally. During the night, the temperature reached 104 degrees F., and swelling and redness were noted over the inner canthus of the left eye. The temperature started to drop the next day. By 5 p.m, 24 hours after admission, the inflammation had begun to recede and by noon the next day, the temperature was normal and he appeared to be entirely well. He was allowed to go home and had no further trouble.

This case was one of acute fulminating ethmoiditis with orbital manifestations which was aborted by the prompt administration of penicillin. Without the aid of this valuable drug, a severe bilateral orbital cellulitis most certainly would have developed and the case might well have assumed serious proportions.

Case 2

The following case report illustrates the necessity of surgical drainage along with the antibiotics in the management of intracranial complications of sinus origin.

A 43-year-old man was admitted to the Research and Educational Hospitals with a history of intermittent sinus treatment for nine years. Three months previous to admission he developed personality changes followed by right frontal headache and swelling over the right upper eye lid. Penicillin afforded some relief but when admitted he was in an irrational, semidelirious state with a temperature of 101 degrees.

X-rays revealed a right pansinusitis with right frontal bone involvement. A left hemiparesis developed and the patient became semicomatose. At operation, a subdural collection of 40 cc. of pus was released from the right fronto-temporal region and incision of the orbital abscess produced 30 cc. Subsequently other collections were drained from the frontal lobe.

The patient received aqueous penicillin injections of 1 million units every 3 hours and later streptomycin was added. Now, 4 months later he had returned to a normal state and a plastic procedure is being considered for correction of the defect in his forehead incurred by the removal of diseased bone.

ANTIHISTAMINIC DRUGS

The antihistaminic preparations have long been used for relief of symptoms associated with hay-fever and perennial allergy. A few years ago they were publicized by pharmaceutical houses as a new remedy for the common cold. As far as is known, no carefully controlled experiments have been carried out to verify these claims. In all probability the cases of head colds supposed to have been aborted or relieved in their early stages by the antihistaminics were not colds as we understand them but merely acute flare-ups of an individual's allergy.

These preparations are given in all conditions in which the release of histamine is supposed to be the causative factor. They are effective in varying degrees in hay-fever and other inhalant allergies and drug reactions such as those caused by penicillin, allergic dermatitis, pruritus, urticaria and angioneurotic edema. They are less effective in gastrointestinal disorder, migraine headaches and food allergies. They afford prompt relief in the form of ointments when applied following a bee sting, but in other skin conditions such as atopic dermatitis and eczema these preparations have little action for it has not been established in these conditions that histamine is the causative agent. Likewise in bronchial asthma, these drugs are of little value which would indicate that factors aside from the release of histamine were the basis for the attack.

Although relatively safe when used properly, the antihistaminics also are capable of producing damaging effects. Shortly after "over the counter" sales were permitted, Feinberg[1] collected 12 cases of fatalities traced to self-administration of these drugs. Less serious effects were noted occasionally by prolonged use of these compounds. Crumbley[2] cited 3 cases of hemolytic anemia all of which regained a normal blood picture upon withdrawal of the drug. In Hilker's case[3] agranulocytosis developed following 8 weeks treatment with 3 tablets of the antihistaminic daily for urticaria. The patient recovered promptly when the drug was discontinued. The case reported by Martland and Guck[4] was similar. Their patient took three 50-mg. tablets daily for 5 weeks for hay-fever symptoms. She became acutely ill and was hospitalized. Initial white cell counts were 1,950 and 1,300 with almost complete absence of granulocytes. On the third hospital day, she showed evidence of recovery and became asymptomatic 3 days later. On the 17th hospital day, the symptoms were reproduced by the administration of one 50-mg. test dose of the antihistaminic drug, but these disappeared the following day.

Cases such as those recorded above are unusual. Damage to the blood cells was noted only after prolonged use of the drugs and all cleared up following their withdrawal. The report of an occasional case should not discourage employment of the antihistaminic remedies when they are properly indicated. They should, however, be prescribed by a physician and their use so controlled that their ill effects may be recognized and treatment instituted promptly.

ALLERGY

The application of allergy to other fields of medicine is becoming increasingly more apparent as time goes on. Otolaryngologists have been slow in recognizing the importance of allergy to their specialty, yet now it is generally estimated that a majority of their cases are on an allergic basis. Many are prone to treat patients who present themselves with headaches and a stuffy nose for a mythical sinusitis, with ineffective packs, shrinking nose drops or surgical procedures of one sort or another while the cause of the symptoms, allergy, is overlooked or touched upon lightly.

In the typical cases of nasal allergy the condition is easily recognized by the characteristic purplish, pale, edematous nasal membranes, the stuffy, congested feeling with clear watery discharge, sneezing attacks, itching of nose and eyes and frontal headaches. Appearing less frequently are: hoarseness or huskiness, cough, tubal or middle ear catarrh and sore throat. Conditions which appear occasionally in some individuals due no doubt to allergic flare-ups, are frequent colds and attacks of flightiness and vertigo. The so-called Meniere's syndrome (labyrinthine hydrops) characterized by sudden attacks of dizziness, head noises and deafness is a water logging of the inner ear and as such, is similar to the boggy swelling of the nasal membranes during hay fever time. Allergy is definitely a contributing factor in Meniere's syndrome but it is not likely that this is the sole cause, for in this condition as in asthma, attacks are usually induced by a combination or sequence of factors. Prominent in the list are shock and emotional strain, fatigue, chilling and infection. In these cases the Alarm Reaction and the Adaptation Syndrome of Selye may be applied[5]. Selye has demonstrated that there are normal physiological and biochemical reactions of the body to shock and stress. The hormones of the adrenal cortex become depleted or are liberated in excess and this results in profound pathological changes in remote structures.

A case in kind was observed recently in a young married woman who was known to be allergic to house dust and who was suffering from an acute maxillary sinusitis of two weeks' duration. The strain of the recent holidays with three small children added to her problems. The final blow came with the news that her best friend had just had a heart attack. This initiated an attack of dizziness which two weeks later became so pronounced as to require hospitalization. There the symptoms receded after two days with the change of environment, rest, antihistaminic therapy and sympathetic understanding of the psychogenic aspects of the case. The sinuses cleared up and her only complaint when last seen was an occasional flightiness which was gradually disappearing.

Undoubtedly in protracted cases of this type, the administration of adrenocorticotropic hormone (ACTH) and cortisone which have shown promise of success in the treatment of allergic pneumonitis (Loeffler's syndrome) asthma and other manifestations of allergy, should be considered.

In hay fever patients, ACTH and cortisone have been employed in the treatment of the complaint during the height of the rag-weed season. Koelsche and his co-workers[6] treated 7 patients with these preparations and obtained symptomatic relief in all but one. The authors (Koetsche et al) do not advocate the routine use of these substances in the management of nasal allergy but think there is a place for them in patients who have failed to respond to other measures. In their cases relief was largely confined to the period during which the drug was given and no curative effects other than shrinkage of polyps were noted. They reported no undesirable manifestations followed this form of therapy, nevertheless it should be kept in mind that such effects are possible and this points the way to caution in the use of these substances in their present form development.

INTRANASAL MEDICATION

We began years ago in the eighteen-eighties with oily sprays of various colors and odors. These were worthless but fortunately, only slightly harmful. Then a few decades later the nasal tampon was ushered in. These are white or brown, depending on your color preference.

The colloidal silver salts, neosilvol and argyrol are alkaline and irritating to nasal mucous membranes. They are harmful in the acute stages and of no value in the chronic. In subacute infection their irritating actions produce a flow of mucus which some think of value but the same could be produced by a few whiffs of snuff or any other irritant. Much more can be gained in the treatment of these cases by using irrigation or the Proetz displacement method which draws out the accumulated secretions by suction.

We are now in the nose drop age. Nose drops came on with the introduction of ephedrine in 1926 which temporarily shrinks down the nasal membranes. The relief obtained in this manner must be weighed against the inevitable detrimental effects of the application of this drug which removes protective hyperemia of the nasal tissues, lowers local resistance and violates the principles of management of acute inflammations.

To be deplored is that practice of many physicians today who prescribe shrinking nose drops for the complaint of nasal blockage without first seeking the cause and nature of the symptom. Even though a diagnosis has been reached, vasoconstrictors should be prescribed only with the understanding that very little curative value may be credited to them and that the relief afforded will be temporary only. It should also be kept in mind that the continued use of nasal vasoconstrictors may lead to disturbances of nasal function to such an extent that allergic conditions remain uncontrolled and pathologic membranes may progress to a state of chronicity.

Rhinitis medicamentosa (vasomotor rhinitis medicamentosa) is a term that has been applied to the condition of the nasal mucous membranes which results from overuse of shrinking solutions in the nose. The mucosa covering the intranasal structures becomes pale and edematous. The swelling is sufficient to block the nasal airways and the condition persists except when a temporary respite is gained by the application of a nasal decongestant. This form of rhinitis may be produced by the continued application of most any of the vasoconstrictors in common use but has been especially noted following the use of privine hydrochloride, a drug recognized for its thorough, prompt pressor action. Many articles have appeared calling attention to the untoward effects of the prolonged use of this drug. Cases have been cited where a dependency for privine developed which lasted for several months and showed every indication of continuing indefinitely. The habit may be broken by the prompt elimination of the drug, search for and removal of the contributing causes of the blockage and sedation for the first few nights to induce sleep during the period of readjustment.

A case in point is that of Mr. D. seen in May, 1949. He had been using privine steadily night and day for 3 years and as often as every 2 hours in order that he might continue with his work as a welder. Examination revealed pale, boggy nasal mucous membranes which completely blocked both nares. Pus was observed in the middle meati and irritation brought a return of considerable pale exudate from both antra. He required phenobarbital each night for 5 nights and reported that on the sixth day, the nose opened satisfactorily. He was given dust extract injections in a dilution of 1 to 1,000,000 each week and at the time of injections the sinuses were irrigated. The sinuses were negative on the 6th irrigation and have remained so since then and he no longer complains of nasal stuffiness.

The incorporation of sulfathiazole in nose drops was unfortunate. These solutions are of no proven value applied locally in the nose and are actually harmful to the mucosa. Most of the preparations containing sulfonamide have a high pH, are extremely irritating and by and large have contributed much to the promotion and continuation of nasal and sinus infections. Happily the use of these harmful preparations is rapidly being discontinued.

Solutions containing tyrothricine, penicillin, bacitracin and other antibiotics as nose drops have proved disappointing. It is true that many articles favoring their use have appeared but these are singularly devoid of reports of carefully controlled experiments and in such circumstances it is always questionable just which should receive credit for improvement in the case, the drug or the treatment incidental to its application. In most of the reports, the antibiotic is incorporated in vasoconstricting solutions or the tissues of the nose are shrunk down previous to its use and the temporary improvement noted by the patient may well be due to the shrinking solution which opens up the passageways and helps clear the nose of accumulated secretions.

The drugs in order to be effective must come in contact with the infecting microbes. This they fail to do when applied as nose drops or aerosal inhalations for the organisms being located at various depths in the membranes lining the cavities may only be reached by blood-borne remedies.

Nose drops employed in office practice are indispensable. As a shrinking agent or a vehicle in the suction treatment of the sinuses they occupy a highly important position in the rhinologist's office. There are also occasions when a nasal vasoconstrictor is greatly appreciated by a patient in much need of rest and sleep but they should never be prescribed with the idea in mind that they will effect a cure in an acute head cold or any type of sinusitis.

If nose drops must be prescribed only those which meet certain requirements should be considered. They should as nearly as possible simulate the normal secretions of the nose. They should be isotonic and non-detrimental to ciliary activity. They should be non-irritating with a pH slightly on the acid side and they should not be of the type which leads to a dependency on their use. Ephedrine 0.5 per cent in normal saline solution and many of the synthetic sympathomimetric preparations such as neosynepheran or rhinalgan fulfill the requirements.

BIBLIOGRAPHY

1. Feinberg, S. M., Personal communication.

2. Crumbley, Jr., James J., Anemia Following the Use of Antihistaminic Drugs, JAMA, 143:726 (June 24) 1950.

3. Hilker, A. W., Agranulocytosis from Tripelennamine (Pyribenzamine) Hydrochloride, JAMA, 143: 741 (June 24) 1950.

4. Martland, Jr., H. S. and Guck, J. K., Agranulocytosis after Antihistaminic Therapy, JAMA, 143: 742 (June 24) 1950.

5. Selye, H., The General Adaptation Syndrome and the Diseases of Adaptation, J. Clin. Endocrin., 6:117, 1946.

6. Koelsche, G. A., Maytum, C. D., Prickman, L. E. and Carryer, H. M., Use of Cortisone and ACTH in the Management of Nasal Allergy, Ann. of Allergy, Vol. 9:573, Sept.-Oct., 1951.

135 South LaSalle Street

Rectal Sodium Penothal Anesthesia in Children*

Gertrude O'Kelley, R. N. A.
Memphis, Tenn.

In 1869 Claude Bernard demonstrated the value of mental relaxation, minimal reflex irritability, or, in short, the desirability of having patients in the best possible basal condition preparatory to anesthesia.

Dr. M. L. Weinstein of Chicago Memorial Hospital first used sodium pentothal as a rectal basal anesthetic in 1939. Before this date sodium pentothal, a sulphur derivative of nembutal, had been used successfully by many others as an intravenous anesthetic. Dr. Weinstein states that "sodium pentothal rectally is a safe basal anesthetic agent and is useful in most if not all surgical procedures, both in children and adults, including those with hepatic and renal diseases".

With an accurately calculated dosage, respiration is rarely depressed and the blood pressure is not appreciably affected. The drug is rapidly eliminated by the liver and kidneys which aids in allaying shock and preventing cerebral anoxia. It has been suggested that sodium pentothal acts synergistically with ethylene, ether, cyclopropane, and nitrous oxide.

We have used solutions of sodium pentothal varying in strength from 2½ per cent to 10 per cent but have decided that a 5 per cent solution is optimal. Of this 5 per cent solution we administer 0.4 cc. per pound of body weight. Our preparation of the patient consists first of giving an enema approximately six to eight hours before the beginning of the anesthetic. We use plain water or saline enemas to prevent the irritation of bowel mucosa and subsequent mucous production from soapsuds enemas. Older children are given atropine sulphate hypodermically in amounts calculated by their age and weight approximately forty-five minutes before the anesthetic solution is administered. Atropine is not considered desirable in children under two and one-half years of age. Dr. Adams and Dr. Hendrix believe that it increases the possibility of mucous plugs in young children by thickening the secretions.

I always try to talk to my little patients about the "dream medicine" that they are to receive before its administration, and their cooperation is excellent. After well lubricating the anus, a soft rubber catheter of appropriate size is inserted past the anal sphincter. The required amount of a 5 per cent solution is drawn into a Luer syringe and injected at the rate of 20 cc. per minute, after which the catheter is removed and a strip of adhesive is placed across the buttocks in such a manner as to make some pressure against the anus in an effort to help the patient retain the solution.

---

* Presented before the Tennessee Association of Nurse Anesthetists. February 14, 1952, Memphis, Tenn.

COMMENT

Dr. Wm. Adams, Dr. Lorenzo Adams, Dr. James Henrix, and Dr. Allen Vincoff:

To date we have used this method in 127 cases and none have showed any abnormal sensitiveness to rectal sodium pentothal. We have not used test doses on any of the patients. We do, however, keep a supply of oxygen and respiratory stimulants available.

There are many advantages to recommend rectal sodium pentothal but our greatest satisfaction stems from the friendly attitude of these children toward the anesthetist after having one or several such anesthetics in dire contrast to the attitude of those who have been held down and put to sleep with ether on an open cone. Last, but not least, the anxious parents watching this child see it go peacefully to sleep in its room instead of having to be carried screaming down the hall to surgery.

We feel that rectal sodium pentothal has well earned a deserved place in the armamentarium of every modern and well-trained anesthetist. Particularly is this true with reference to anesthesia of children.

Medical Education in Mississippi

Thomas J. Marland, M.D.
Jackson, Mississippi

We are on the verge of accepting a tremendous responsibility in Mississippi. At the start I want to say that we will succeed; but before we succeed we must be sharply aware of some things that will be necessary for that success. In using "we" I purposely include everyone—not only the physicians of Mississippi but all of the people also, because if the areas outside of our profession have a **laissez-faire** attitude, then our project will end in failure. These people must be constantly reminded that this school is primarily for their benefit. It is their school and they must have all the pride that goes with personal ownership of something fine. So there will be two groups of responsibility, one assumed by the physicians and the other by the people, combined to produce a complete medical education second to none. This discussion will be limited to some of the various problems peculiar to the first of these groups—some of the things that we as physicians must insist upon to insure the highest type of medical education for our citizens and our state.

This responsibility spoken of at the beginning of this discussion is that of furnishing a complete medical education within our own state. The primary function of this school will be to produce competent physicians—more specifically, competent general practitioners for the smaller communities in Mississippi. The trend in physician distribution has been to the larger cities and it is not hard to understand. The medical student grows up in an atmosphere of big-city medicine where all the modern facilities and allied skills are available for the practice of modern medicine. If a student is educated properly his foremost desire is to render the same type of service to his patients as he has witnessed during his education. Up until recently a young doctor would definitely be handicapped in this respect in a small community. However, this situation is now largely changed, especially in Mississippi. In the past few years we have one of the most active hospital construction programs in the nation, with the result that now there is almost no area regardless how small or remote that is not within a few minutes of a modern hospital. So, before we start we are already endowed with an advantage that many states still do not have. We can entice our future physicians with modern conveniences in rural areas plus all the many satisfactions of life in a small community. All this is with the assumption that our future doctors will be competent and that they will have not only a justified self-confidence but the confidence of the people that they are to serve.

It would be a mistake if we felt that all our efforts are going unnoticed. We are entering the highly competitive field of medical education. Our school will be the newest and youngest in a highly respected family of some very illustrious medical schools. There will be critical eyes cast in our direction and if it is to take its place, not behind but alongside of the others, we must meet with approval from the others. In many respects being in the limelight has its advantages, because if we travel in the right direction, others will copy and adopt some of our methods, which is evidence of general approval.

Many medical educators in the past have advocated a period of general practice as a prerequisite for advanced or residency training. In view of the specific objective of our school, this practice could easily be adopted. However, instead of the usual year of internship a fifteen-month or even eighteen-month training program would be desirable and in this way the individual would be better prepared to do general practice. This plan would not only guarantee a continuous flow of general practitioners, but would also produce a specialist that was acquainted with all branches of medicine. Also a certain number of these would recognize the many advantages of general practice and would continue to do this as his life's work. It appears that many would adopt this plan if there was a precedent, and Mississippi is in a unique position to set that precedent with general approval from all.

The problem of securing the men and women who will be necessary as the actual educators, the teachers, is perhaps the most important aspect of this entire discussion and it has purposely been left until the last. We must realize that the entire education of a medical student must be cemented with an unrelentless, persistent idealism. Our medical heritage is sacred and in order to secure the ever-progressing future of medicine this heritage must become as much a part of an individual as his religion, as his morals, even as his soul. It takes a certain type of person to instill this exceedingly important ingredient into others. In this respect, we are fortunate in already having individuals in the two-year school with these qualities. But we will need others and these men should be carefully sought after. They should be individuals who are finished products in their particular field. They should devote their entire time to the honorable profession of teaching the science and art of medicine. One of the ever-present problems of all medical schools is that of obtaining such individuals. In order to entice them they must be guaranteed academic freedom, they must be given an adequate wage so that they can enjoy the standard of living shared by their practicing colleagues, and they must be assured of their professional associates being of the same calibre as themselves. Their subordinates must be men qualified for the honor of teaching students by virtue of their training and experience. All these people must have an inborn desire to teach; they must strongly sense their obligation to teach. The most venerable men of medicine are the educators in our medical schools. Teaching carries with it a certain prestige that all men covet; however, in choosing these men we must recognize the one who attaches himself to the medical school primarily for his own material gain. We cannot sacrifice a high academic level for any reason. It takes the type of man discussed to maintain the level. Any compromise or anything less should be considered a disgrace to every physician in Mississippi.

This is written in the hope that it will stimulate others to express their opinions on this subject. Regardless of where we are or what we do this school will affect all of us. If we permit, it will benefit each one of us in many ways, and for this reason we should all be vitally concerned. We should be proud to know that the ones who are actively engaged in planning and organizing the school are doing so with the highest ideals guiding them and are gradually producing what in the future will be a medical education desired by many.

405 Broadmoor Drive

NEW BOOKS

The good medical books being published now by many different companies come as a great blessing to the doctors and in turn to the people. **Current Therapy** for the practicing physician, edited by Dr. Hoard F. Conn and published by W. B. Saunders Company, is one that it seems to us should certainly be on the desk of every practitioner. Another one for the practitioner published by the same company and edited by Cecil is **Specialities in General Practice.** The one outlining the best tested therapy, the other discussing the symptoms, diagnosis and treatment of diseases under different subjects as orthopedics, gynecology, obstetrics, pediatrics, general medicine et al.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College ...... Poet

MISSISSIPPI STATE MEDICAL ASSOCIATION
Dr. J. G. Thompson .... Jackson
President
Dr. Lamar Arrington................ Meridian
President-elect
Dr. Geo. W. Twente .... Jackson
Secretary
Dr. Rowalnd B. Kennedy .... Jackson
Executive Secretary

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
H. T. Smith, M.D. .... President
McGehee, Ark.
L. S. Nease, M.D. .... President-elect
Fayetteville, Ark.
Howard A. Nelson, M.D. .... Vice-President
Newport, Tenn.
Fount Richardson, M.D. .... Vice-President
Greenwood, Miss.
Dewey Peters M. D. .... Vice-President
Knoxville, Tenn.
Thurman Crawford, M.D. .... Secretary
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
L. T. Carl, M.D. .... Jackson, Miss.
J. Harvey Johnston, M.D. .... Jackson, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

COMMISSION ON FINANCING

The American Hospital Association, aided by the American Medical Association, is sponsoring a Commission on Financing of Hospital Care. This a fine move in the right direction. The cost of hospital care is a great social and economic problem in this country. The cost of doctors, nurses, pharmacists, and dentists has pretty well leveled off, but hospital care still has an upward trend. Hospitals are indispensable. They represent the cornerstone in the application of modern medicine. Our people are becoming more hospital-minded and have a better understanding of hospital service. But even so hospital care is too expensive. Better service for less cost is the challenge taken up by the American Hospital Association. While utilizing the benefits of medical research, the new wonder drugs and modern equipment in surgery and therapy, yet we must learn to ferret out the actual essentials and make their applications more simple. This of course must be done without materially lowering the quality of the service. We believe that hospitals themselves can reduce their cost materially and not lower the quality. The spirit of service must be activated in the hearts of the employees. They, along with the entire population, should agree that no person has ever made a great contribution to human welfare who worked just eight hours per day. We believe hospitals are at fault to a certain degree in the towering cost of hospital care. But we do not believe hospitals are wholly to blame. The lack of giving a day's work for a day's pay on the part of too many people is the foundation problem in all employment. But in addition the hospital must have the cooperation of the doctors, the nurses, and the pharmacists and the biological houses and, most important of all, the cooperation of the people. There is a lot of difference in what the people want and what they actually need when they go to the hospital.

We are deeply interested in the undertaking of the American Hospital Association. It should have the full cooperation of the profession as well as the people.

* * *

MENTAL HEALTH

Living is becoming more complicated even though we are living longer. We seem to have more confused minds than ever before. One person out of twelve is expected to enter a mental institution during his life. We have our cancer organization which is helping to solve a big medical problem. We have our heart association which is already serving exceedingly well. We have our polio work and we dare not let up on this challenge. We give special attention to industrial medicine and allergy. But mental hygiene seems to be the worst neglected of all the major threats to our health and well-being. Mental institutions are simply overflowing. There must be a cause. Before we find ourselves in the mental institution we have long since exhibited confused thinking and instability. It is now established that mental troubles often trace back to the very day the baby is born. Some believe that modern hospitals and methods are depriving babies of the proper mother love, and that the mother-child relationship the first two years must be better protected against conflict and frustration.

It does seem time for our state association and our people, our doctors and all concerned, to consider an association for the study of mental hygiene and foster plans that will help parents to an understanding of child-rearing according to natural rhythms and potentialities.

* * *

GREENWOOD HOSPITAL OPENS

We want to offer our cordial congratulations to the fine city of Greenwood on the opening of their new 135-bed hospital. In many ways it is probably the most modern in the nation. All the rooms are air-conditioned and sound-proof. Modern kitchens, dining room, and medical library are ultra. We understand the city is donating the water and lights to the hospital.

Our esteemed friend and college mate, Hon. C. C. Whittington, presided over the meeting. Hon. Will M. Whittington delivered the welcome address. The guest speakers were Gov. Hugh L. White, Ex-Governor Fielding Wright, and Dr. Henry Boswell. G. C. Roberts, another college mate, presented the Gideon Bibles to the hospital. Rev. Van Arnold and J. H. Kysar delivered the invocation and benediction. The Greenwood High School band was quite an asset to the occasion.

Members of the Hospital Commission present were: Mr. Jack Montgomery, Drs. Henry Boswell and W. H. Anderson, and the efficient executive secretary of the Commission, Foster L. Fowler.

The medical staff of the hospital are: Drs. G. Y. Gillespie, Chief, J. C. Adams, J. M. Alford, George Baskerville, I. B. Bright, S. L. Brister, John Lucas, E. M. Meek, George Nasser, H. A. Nelson, L. B. Otken, J. C. Pegues, Fred Sandifer, and R. E. Wilson.

We are very happy to know that Greenwood has a hospital that the state and the South can point to with pride.

* * *

The J. A. Majors Company, representing W. B. Saunders Co., will help you secure any medical book you want and need. Dr. J. A. Majors is a native Mississippian of whom we are proud. He is big-hearted and generous and loves his friends.

MID-SOUTH PRESIDENT

Foremost in the profession among Arkansans, Dr. H. T. Smith of McGehee, Arkansas, brings to the presidency of the Mid-South Postgraduate Medical Assembly able and safe leadership. He located in McGehee upon graduation from the University of Tennessee Medical School in 1910, since which time he has operated his own clinic. His postgraduate training included work at Johns Hopkins, Tulane, and Chicago University. He holds the place of associate clinical professor of medicine in the University of Arkansas Medical School.

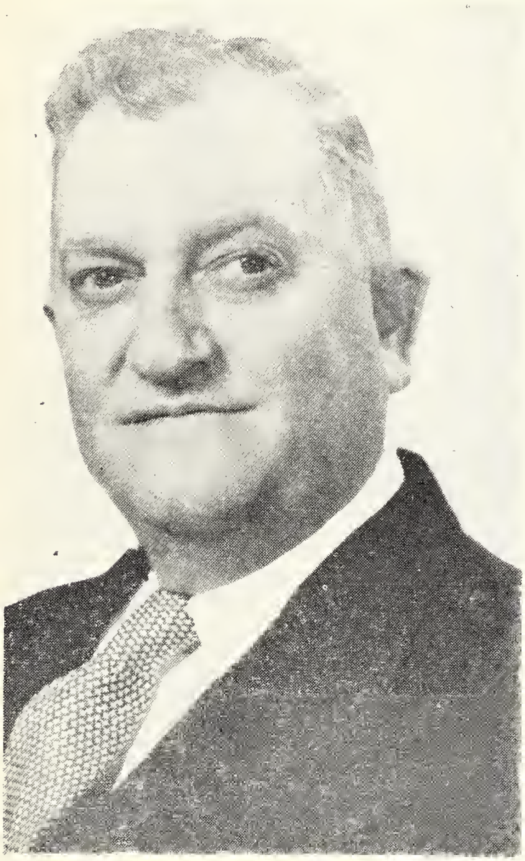
Dr. Smith has been honored often by his confreres. He served as president of the Arkansas Medical Society, president of the Fourth Councilor District Medical Society and the Desha County Medical Society. His memberships include his state society, the Southern Medical Association, his local Rotary Club, in which he holds a perfect attendance of twenty-five years, and the Delta Country Club, of which he is now president.

Dr. Smith and the program committee are already busy on plans for the 1953 meeting next February.

Mississippi State Medical Association Program

Dr. Jimmy Thompson of Jackson has done a good job as president of the Mississippi State Medical Association this year. He has been active and interested in all of our problems, exhibiting a progressive leadership for the state association. He has kept abreast with the problems of the state in general, while spreading good cheer and promoting good will for the doctors.

PRESIDENT-ELECT



DR. LAMAR ARRINGTON

Coming to the helm of the state association is a Mississippian who has exhibited outstanding ability in his chosen field of pediatrics and leadership in the profession—Dr. Lamar Arrington of Meridian. A graduate of the University of Missisippi and Tulane University School of Medicine, he established himself in Meridian in 1928, and is owner of the Arrington Hospital there.

Dr. Arrington was serving his district as councilor when he was elected president-elect of the state association. He is councilor from Mississippi for the Southern Medical Association, a fellow in the American Academy of Pediatrics and the American College of Physicians, and a director of the Blue Cross in Mississippi.

A Presbyterian, Dr. Arrington is active in church and civic affairs, ably assisted by his charming and talented wife.

The association will move forward with vision and a progressive spirit under the new president.

DOCTOR'S DAY LUNCHEON SPEAKER

DR. JOSEPH S. STEWART

Highlight of the convention program is the Doctor's Day Luncheon sponsored by the Auxiliary, of which Mrs. George W. Owen of Jackson is the able president. This luncheon, which attracts all doctors and their wives, will have as its guest speaker on Wednesday, May 14, at 12:30 on the Heidelberg Roof, Dr. Joseph S. Stewart of Miami, Fla., president of the Southeastern Surgical Congress. It is understood that Dr. Stewart's address will be his famous "Of Thee I Sing," challenging and entertaining speech given before this body upon his inauguration.

Dr. and Mrs. John W. Cline, president and first lady of the American Medical Association, will be guests of the association and its president and his wife, Dr. and Mrs. James Grant Thompson. Dr. Cline will address the house of delegates.

Dr. Seale Harriss of Birmingham, Ala., an annual convention guests, will also be welcomed.

FIFTY-YEAR CLUB BREAKFAST

Members of the Fifty-Year Club will hold their annual meeting at the Robert E. Lee Hotel at a breakfast at which Dr. R. B. Caldwell of Baldwyn and Dr. J. K. Avent of Grenada will join the editor as hosts. The breakfast will be held at 7:30 a.m., May 14.

The Past-Presidents' Luncheon is scheduled for noon, Tuesday, May 13.

The Mississippi Chapter of the American Cancer Society, Dr. Willard H. Parsons presiding, will hold its annual breakfast Wednesday, May 14, at 7:30 at the convention hotel.

* * *

Jackson, Mississippi, a favored place for our state meeting, has fine hotels which live up to the city's claim to friendliness and progress. None is more hospitable than the Robert E. Lee, our convention headquarters. Just a little while and in this city will be located the very best medical school in this nation. It will be a glorious day for our entire state because this medical school promises to be the heart and the driving power of the best in medicine to all the people.

* * *

Visit the exhibitors. You will learn a lot. The biological houses have an ambition to serve humanity as does the medical profession. They help to finance our meetings. They are cooperative friends.

* * *

TUESDAY, MAY 13

8:00 a.m.

Registration

9:00 a.m.

Opening Session, House of Delegates

SECTION ON MEDICINE

William K. Purks, M.D., Vicksburg, Chairman

1:00 p.m.

"Endocrine Disorders Encountered in Private Practice"—E. L. Posey, Jr., M.D., Jackson

Discussion to be opened by Norman Bernstein, M.D., Jackson; Arthur Guyton, M.D., Oxford

"Differential Diagnosis of Bronchial and Cardiac Dyspnea"—James R. Foster, M.D., Biloxi

Discussion to be opened by Wesley Lake, M.D., Gulfport; Arthur Guyton, M.D., Oxford

"Theoretical and Clinical Considerations in the Use of ACTH and Cortisone" (Two papers)—**Charles Jones, M.D., New Orleans, La.**

"The Surgical and Obstetrical Risk in Cardiac Disease"—David J. Van Landingham, M.D., Jackson

Discussion to be opened by Curtis Caine, M.D., Jackson

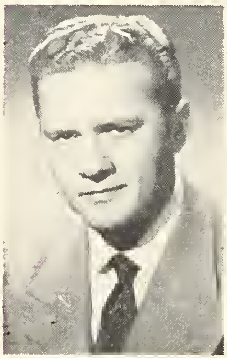
12:45 p.m.

Mississippi Pediatric Society Business Meeting, B. B. O'Mara, M.D., Biloxi, presiding

SECTION ON PEDIATRICS

Harvey F. Garrison, Jr., M.D., Jackson Chairman

1:30 p.m.


Randolph Batson

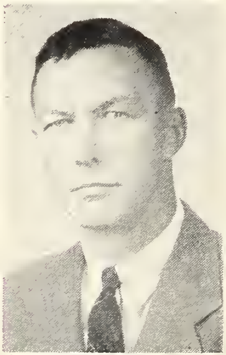
"Practical Management of Polio"—Randolph Batson, M.D., Nashville, Tenn.

Discussion to be opened by Guy Jarratt, M.D., Vicksburg

Neal Owens

"Some Fundamental Considerations in the Rehabilitation of Crippled Children" — Neal Owens, M.D., New Orleans, La.

Discussion to be opened by W. E. Noblin, M.D., Jackson


Clifford G. Grulee, Jr.

"Colic in Infancy" — Clifford G. Grulee, Jr., M.D., New Orleans, La.

Discussion to be opened by Lamar Arrington, M.D., Meridian

"Bleeding from the Gastrointestinal Tract in Pediatrics"—Alvin White, M.D., Pensacola, Florida

Discussion to be opened by Byron Alexander, M.D., Jackson

"Atresia of Esophagus and Tracheo-esophageal Fistula"—George E. Twente, M.D., Jackson

Discussion to be opened by George Gillespie, M.D., Laurel

WEDNESDAY, MAY 14

7:30 a.m.

Fifty-Year Club Breakfast — Robert E. Lee Hotel

SECTION ON HYGIENE AND PUBLIC HEALTH

R. L. Watt, M.D., Holly Springs, Chairman

9:00 a.m.

"Resumè of Recent Research Findings in Poliomyelitis"—A. L. Gray, M.D., Jackson

Discussion to be opened by J. A. Kiely, M.D., Vicksburg

Paul Williamson

"Training for General Practice" — Paul Williamson, M.D., Memphis, Tenn.

"Some New Aspects in the Epidemiology and Control of Infectious Hepatitis"—Hugh. R. Williams, M.D., Atlanta, Ga.

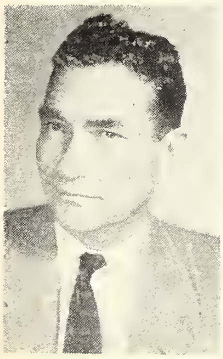
"Current Detection of Chest Disease"—H. K. Strauss, M.D., Jackson

Discussion to be opened by Ray H. Biggs, M.D., Sanatorium

SECTION ON SURGERY

R. E. Shands, M.D., New Albany, Chairman

9:00 a.m.


Barton McSwain

"Surgical Diseases of the Spleen" — Barton McSwain, M.D., Nashville, Tenn.

Discussion to be opened by Frank Wood, M.D., Jackson; J. T. Davis, M.D., Corinth

"Management of Head Injuries"—Charles L. Neill, M.D., Jackson

Discussion to be opened by Arthur Brown, M.D., Columbus

"The Treatment of Acute Face Injuries by the General Surgeon" — Jack A. Atkinson, M.D., Brookhaven

Discussion to be opened by Eugene Bush, M.D., Laurel; John Dyer, M.D., Houston

"Cervicitis with a Plea for Routine Biopsy"—M. M. Snelling, M.D., Gulfport

Discussion to be opened by R. H. Fenstermacher, M.D., Vicksburg

12:30 p.m.

Past-Presidents' Luncheon

SECTION ON EYE, EAR, NOSE AND THROAT

Donald S. Hall, M.D., Vicksburg, Chairman

1:30 p.m.

"External Diseases of the Eye"—Philip M. Lewis, M.D., Memphis, Tenn.

"Laryngofissure"—Mercer G. Lynch, M.D., New Orleans, La.

"Ocular Brucellosis"—Francis E. McCullough, M.D., Jackson

Discussion to be opened by Lynn D. Abernethy, M.D., Jackson

"Oral Fistula of the Maxillary Sinus"—Philip J. Bayon, M.D., Natchez

Discussion to be opened by Lemann H. Bounds, M.D., Meridian

"Otitis Media with Effusion"—C. M. Murry, M.D., Oxford

Discussion to be opened by Eugene S. Busby, M.D., Hattiesburg

THURSDAY, MAY 15

SECTION ON OBSTETRICS AND GYNECOLOGY

I. J. Newton, M.D., Greenville, Chairman

9:00 a.m.

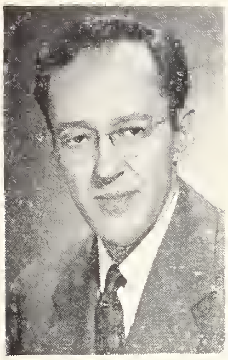
"Carcinoma of the Cervix-Irradiation versus Surgery"—James L. Royals, M.D., Jackson

Discussion to be opened by R. A. Street, Jr., M.D., Vicksburg

Subject to be announced later—J. A. K. Birchett, Jr., M.D., Vicksburg

Discussion to be opened by G. A. Rush, Jr., M.D., Meridian; I. C. Knox, Jr., M.D., Vicksburg

Subject to be announced later—Fred W. Hauser, M.D., Greenville


Claiborne Williams

Discussion to be opened by John Lucas, M.D., Greenwood

"Changing Trends in Prenatal Care" — Claiborne Williams, M.D., Nashville, Tenn.

Pertinent motion pictures will be shown by C. E. Lewis, M.D., Jackson.

1:00 p.m.

House of Delegates

Adjournment

HEADS ARKANSAS MEDICAL

Dr. S. A. Drennen of Stuttgart, Ark., was elevated to the presidency of the Arkansas Medical Association. He will be an honor to the association. At the meeting he made the following observation: "Let's go home and practice better medicine. Let us not dig and gouge John Doe for everything we can. And let us join civic organizations to become a little closer to our community." This is fine advice. We must treat the patient as well as the disease and unless we enter into the pleasures and joys and sympathies of the people, laugh with them in their gladness and shed a tear with them in their sorrow, know their home life and the circumstances under which their babies came into the world, we can not do a good job of treating them. The time has come when the doctor must do his part as a citizen. He must not shirk. The challenge to the medical profession is to build a citizenship adequate to meet any problem that may come before us. Physical, mental and spiritual health each must be given due consideration. To do this the medical profession must take first place. Dr. Drennen should be heeded.

STATE BOARD EXAMINATIONS

1. The following medical examination will be held in Jackson, Miss., at the Robert E. Lee Hotel, Convention Hall, twelfth floor, and will begin promptly at eight o'clock each morning, June 23 and 24, 1952.

2. (a) Subjects for the first day (June 23) covering the first two years:

Anatomy, Chemistry, Physiology, Histology & Bacteriology, Pathology, Materia Medica & Pharmacology

(b) Anyone desiring examination only on the first two years must present a certificate before the examinations **showing successful completion** of the subjects involved and the **date** of completion.

3. (a) Subjects for the second day (June 24) covering the last two years:

Hygiene, Surgery, Obstetrics & Gynecology, Physical Diagnosis, Theory & Practice of Medicine, Eye, Ear, Nose and Throat

(b) An applicant for final examinations must present medical diploma before the examinations begin.

4. Fee for examination is $10.25, payable to the Mississippi State Board of Health and should accompany the completed application blank. (If the applicant has passed examinations on the first two years before this Board, it is **not necessary** to send another fee with his application).

Deaths

Dr. H. C. SHEFFIELD

Last rites for Dr. H. C. Sheffield, well-known Jackson physician, were held March 5 in Jackson. Dr. Sheffield, 62, died following several months illness. He lived at 111 Sivley.

Dr. Sheffield had lived in Jackson for the past 26 years, coming here from Meridian where he formerly practiced. His first practice was at Pittsboro. He was born and reared in Calhoun County, was a graduate of the University of Tennessee Medical School, 1915, and did post-graduate work at Tulane. He was a member of the American, and Southern Medical Associations and Central Medical Society. He was a 32nd degree Mason and past potentate of Wahabi Shrine Temple. He was a member of Capital Masonic lodge No. 600, Scotish Rite, Civitan club, Jackson chapter of Easter Star, Rebel Ring of the International Brotherhood of Magicians and Theta Kappa Psi medical professional fraternity.

He was on the board of stewards of Galloway Memorial Methodist Church and the board of directors of the Old Men's Home.

He is survived by his wife, Mrs. Mabel Powell Sheffield, one daughter, Miss Martha Frances Sheffield, both of Jackson; one son, Lt. Col. Paul Sheffield, U.S. Army, stationed in Stuttfort, Germany; two sisters, Mrs. M. A. Webb, Cleveland, and Mrs. A. D. Moreland, Pontotoc; one brother, J T. Sheffield, Dallas, Tex.; two grandchildren, Bobby and Sandra Sheffield.

DR. J. W. CRUMPTON

Services for Dr. Joseph Walter Crumpton were held at the First Presbyterian Church of Starkville February 22. Dr. Crumpton, who was 92, died at the home of his daughter, Mrs. W. P. Jackson, in Starkville. He had been suffering from a kidney ailment.

Dr. Crumpton was born at Betheden in Winston County April 22, 1859. He attended the Betheden Collegiate Institute and received a medical degree from Nashville University in 1882. The same year he began the practice of medicine in Sturgis and Oktibbeha County at the age of 23.

He continued to practice medicine until he was 85, and in May, 1949, was honored at a special meeting in Starkville.

Dr. Crumpton served on the State Board of Health 1908-12. and in the Mississippi House of Representatives from 1896 to 1908. He was twice elected to the Mississippi Senate.

Dr. Crumpton was a leader in organizing the A&M Cooperative Creamery at State College in 1912. He served as manager and as a member of the board of directors of the creamery for several years.. In 1889 he married Elizabeth Fondren of Choctaw County.

He leaves seven children, Joe R. Crumpton of Seattle, Wash.. W. M. Crumpton and Dan F. Crumpton of Clarksdale. and Mrs. W. P. Jackson, Mrs. W. C. Friday, Mrs. A. S. Crigler Jr. and Mrs. Tom Mosley of Starkville; a sister, Miss Anne Crumpton, Sturgis; and a brother. Shepherd Crumpton, of Craig Springs. In addition he leaves 13 grandchildren and five great-grandchildren.

DR. W. B. DICKENS

Dr. William Butts Dickens, prominent Leflore County physician for more than 50 years, charter member of the Greenwood Rotary Club, vice-president of the Leflore Building and Loan Association, past president of the Delta Medical Society and member of the "50-Year Club" of the Mississippi Medical Association. died Sunday. March 16. 1952 at the Greenwood Leflore Hospital following a short illness.

Dr. Dickens was a graduate of the Louisville Medical College. Louisville, Ky.

DR. JAMES W. BARKLEY

Dr. James Wesley Barkley, Humphreys County public health officer since 1933, died at his home following a long illness. He was 53.

Born in Cotton Plant, Miss., Dr. Barkley was graduated from Mississippi Heights Academy at Blue Mountain and the University of Mississippi. He received his medical degree from the University of Tennessee.

He entered private medical practice at Ripley. Miss., before joining the Mississippi State Health Department. He was public health officer at Iuka and Hazlehurst before locating in Belzoni.

Dr. Barkley was a member of the First Baptist Church of Belzoni, and a Mason. He was a member of the Delta Medical Society, the Mississippi Medical Association and the American Medical Association.

He leaves his wife, Mrs. Iva Powell Barkley; three sons. Sergt. James Barkley of Tuscon, Ariz.. and Gene Barkley and Don Barkley of Belzoni; his father. J. B. Barkley of Cotton Plant; three brothers, Dr. T. J. Barkley of Belzoni, Claude Barkley of Cotton Plant and Roy Barkley of Memphis, and a sister, Mrs. Paul Pape of Memphis.

DR. T. E. ROYALS

Funeral services were held February 21 for Dr. Thomas Edward Royals, 73, prominent physician and member of one of Meridian's outstanding families.

Dr. Royals is survived by one daughter. Mrs. James T. Singley. grandson, Thomas Royals Singley, sister, Miss Mattie Royals, all of Meridian; two brothers, A. T. Royals and nephews.

Dr. Royals had practiced his chosen profession in Meridian for more than 40 years. He attended the city schools, continuing his education at A.&M. College (now State) before entering Tulane University, New Orleans, to study medicine. Following his graduation from that institution, he interned in New Orleans.

In addition to his wide private practice, Dr. Royals served as physician for several railroads for many years and performed the same duties for the county.

A veteran of World War I, the physician took an active part in the American Legion, the Masonic, Shrine, and Woodmen of the World activities. He was a member of the First Presbyterian Church.

DR. THOMAS BUTLER

Funeral services were held for Dr. Thomas Bentley Butler Jr., in San Antonio, Texas.

He was a native of Mississippi and received his medical degree from Tulane University and had served his internship at Santa Rosa Hospital in San Antonio.

Survivors include his widow, Mrs. Corrine Krueger Butler; a son, Thomas B. Butler III; a daughter, Miss Beverly Butler, all of San Antonio; three brothers, Drs. H. Anderson Butler, Liberty, Miss., Edwin M. Butler, Natchez, Miss., and G. Harrison Butler, Fayetteville, Ark.; and one sister, Mrs. Fred Schleit of Natchez.

DR. JAMES F. SIMMONS

Funeral services for Dr. James Franklin Simmons, 86, who died suddenly March 27. were conducted at First Baptist Church in Greenville.

Dr. Simmons was born at Newton. He lived his early life at Newton and received his medical degree at University of Kentucky. He also took post-graduate courses at Tulane and University of Tennessee.

Dr. Simmons practiced medicine in Greenville ten years. Prior to that he practiced at Sidon, Cleveland, Greenwood and Sunflower. He was a member of the Delta Medical Society and of the Greenville lodge of Elks.

He leaves his widow; three daughters. Mrs. M. H. Jones of Longview, Tex., Mrs. John H. Bartels of New York City, Mrs. J. W. Davidson of Oxford; a brother, Charles Simmons of Newton, and three sisters. Mrs. Leona Walker and Mrs. Asdie Bracken. both of Newton, and Mrs. Abbey Bishop of New Orleans.

DR. D. W. WHITAKER

Dr. Darel W. Whitaker. fifty-nine-year-old Panola County physician, died March 23 at his home in Batesville after a lengthy illness.

Dr. Whitaker was born in Madison, Missouri, received his medical education at the University of Tennessee, Memphis, Tenn., graduating in 1925. Before moving to Batesville ten years ago he practiced in Coffeeville and in Sardis, Miss.

SEN. T. H. HENRY

Dr. T. H. Henry, retired physician and veteran lawmaker, collapsed in his hotel room in Jackson, March 23, and died en route to a hospital. He was 76.

A member of the state senate from Lowndes County since 1940, Dr. Henry had been a prominent figure in the drive for better public health facilities for Mississippi.

The veteran legislator, a close friend and political intimate of Gov. Hugh L. White, also was well known in banking and agricultural circles. He was a director of the Building and Saving Association in his home-town of Columbus. He owned a showplace farm near Columbus.

Dr. Henry was horn March 1. 1876. in Pickens County, Ala. He was a Methodist. Elk, Kiwanian and Phi Delta Theta.

His son, John R. Henry, is southern manager for International News Service in Atlanta.

Dr. Henry was a direct descendant of the first Columbian, Silas McBee, who settled there in 1813, surveyed the town and gave it its name.

After attending college at Southern University, which is now Birmingham Southern, Dr. Henry entered the University of Tennessee where he received his medical education, followed by graduate work at Columbia University, N. Y. His internship was served at Patterson, N. J., and he began practice of medicine in Pickens County, later moving to Tuscumbia, Ala. He returned to Columbus in 1907 where he has lived ever since.

In 1923, Dr. Henry retired from active medical practice except for a brief resumption during the war years when need for doctors was urgent.

He was serving his 13th year in the staate senate. He was twice named without opposition.

Dr. Henry was the son of the late Robert Filmore Henry and Irene Robertson Henry. His wife died in 1929, two years after he retired from active practice.

Besides his son, Dr. Henry is survived by two brothers, the Rev. W. G. Henry of Anniston, Ala., and Glenn Henry of Columbus.

RESOLUTION

WHEREAS, in the past few weeks God in His infinite wisdom saw fit to take from among us four of the prominent members of the Medical Staff of the Mississippi Baptist Hospital; Dr. Brister Ware on the night of February 24, Dr. J. P. Wall on the morning of February 25, Dr. H. C. Sheffield on the night of March 3 and Dr. H. R. Shands on the evening of March 17; and

WHEREAS, these four doctors served as valued and faithful members of the medical staff of the Mississippi Baptist Hospital; Dr. Ware for 21 years, Dr. Wall for 40 years, Dr. Sheffield for 22 years, and Dr. Shands for 42 years; and

WHEREAS, each in His own right and to the extent of His own God-given ability contributed much to the progress of medicine as related to the physical welfare of the people of this community; and

WHEREAS, Dr. Ware, Dr. Wall, Dr. Sheffield, and Dr. Shands were all held in the highest esteem by their associates in the medical profession;

THEREFORE BE IT RESOLVED, that the medical staff of the Mississippi Baptist Hospital go on record as expressing deep regret in the loss of these four trusted physicians to the hospital medical staff and to the medical profession of this community;

BE IT FURTHER REESOLVED, that the Baptist Hospital medical staff express to each bereaved family our sincere sympathy as we share with them in this their great loss;

BE IT FURTHER RESOLVED, that a copy of this resolution be sent to each family, a copy to each daily paper, a copy to the *Mississippi Doctor*, and that a copy be made a part of the minutes of the medical staff of the Mississippi Baptist Hospital.

Respectfully submitted,
J. W. Lipscomb, M.D.
Lawrence W. Long, M.D.
Harvey F. Garrison, M.D.

Woman's Auxiliary

OFFICERS

President	Mrs. George W. Owen	Jackson
President-Elect	Mrs. Richard Clark	Hattiesburg
First Vice-President	Mrs. W. H. Anderson	Booneville
Second Vice-President	Mrs. Willard Waldron	Jackson
Third Vice-President	Mrs. I. C. Huggins	Jackson
Recording Secretary	Mrs. C. C. Hightower	Hattiesburg
Treasurer	Mrs. J. D. Simmons	Cleveland
Parliamentarian	Mrs. V. B. Philpot	Holly Springs
Corresponding Secretary	Mrs. P. R. Greaves	Jackson

COMMITTEE CHAIRMEN

Program	Mrs. T. A. Baines	Jackson
Research and Romance of Medicine	Mrs. I. J. Newton	Greenville
Legislation	Mrs. J. G. Thompson	Jackson
Doctor's Day	Mrs. L. J. Clark	Vicksburg
Nurse Recruitment	Mrs. S. B. McIlwain	Pascagoula
History and Archives	Mrs. Harvey Garrison, Sr.	Jackson
Revisions	Mrs. J. R. Williams	Houston
Budget	Mrs. Stanley Hill	Corinth
Memorial	Mrs. Joe Rogers	Oxford

COUNCILORS

First District	Mrs. George Archer	Greenville
Second District	Mrs. R. L. Wyatt	Holly Springs
Third District	Mrs. A. E. Brown	Columbus
Fourth District	Mrs. J. K. Avent	Grenada
Fifth District	Mrs. H. C. Ricks	Jackson
Sixth District	Mrs. Guy Vise	Meridian
Seventh District	Mrs. C. R. Jenkins	Laurel
Eighth District	Mrs. R. B. Zeller	Hazlehurst
Ninth District	Mrs. M. M. Snelling	Gulfport
Preventorium	Mrs. Henry Boswell	Sanatorium
Today's Health	Mrs. S. L. Bailey	Kosciusko

TWENTY-NINTH ANNUAL SESSION

WOMAN'S AUXILIARY TO THE MISSISSIPPI STATE MEDICAL ASSOCIATION

May 12-13-14, 1952

HEIDELBERG HOTEL, JACKSON

Monday, May 12

8:00 p.m.—Pre-Convention Board Meeting, Silver Room

Tuesday, May 13 — Silver Room

8:30 a.m.—Registration

9:00 a.m.—Coffee Hour for Presidents and Presidents-elect

10:00 a.m.—Opening Session—Mrs. George W. Owen, presiding

Invocation—Mrs. H. F. Garrison, Sr., Jackson

Pledge of Loyalty—Mrs. W. H. Anderson, Booneville

Address of Welcome—Mrs. Temple Ainsworth, Jackson

Response—Mrs. J. K. Avent, Grenada

Presentation of Convention Chairman, Mrs. T. E. Wilson, Jackson

Introductions

Report from A.M.A., Atlantic City, Mrs. Leonard Posey, Jackson

Report from S.M.A., Dallas,
Mrs. W. W. Crawford, Hattiesburg
Presentation of President-Elect,
Mrs. R. H. Clark, Hattiesburg
Roll Call
Report of President
Report of Auxiliary Presidents
Credentials and Registration,
Mrs. Cyrus Johnson
Adjournment

12:30 p.m.—Auxiliary Luncheon, Rose Room
Mrs. George Owen, presiding
Invocation—Mrs. Adna Wilde, Jackson
Greetings from Southern Auxiliary—
Mrs. Eugene Holcombe, Charleston, W. Va.
Music—Mr. Millard Cates, Professor of Voice, Belhaven College
Greetings from A.M.A. Auxiliary—
Mrs. George Turner, El Paso, Texas

4:00 p.m.—Tea, honoring Mrs. George Turner and Mrs. Eugene Holcombe
Governor's Mansion

Wednesday, May 14 — Silver Room

7:30 a.m.—Breakfast, Robert E. Lee Hotel
Past-Presidents of Mississippi State Medical Auxiliary, Mrs. W. H. Anderson, hostess

8:30 a.m.—Registration

9:00 a.m.—General Session, Silver Room
Mrs. George Owen, presiding
Invocation—Mrs. Augustus Street
Greetings from Dr. J. G. Thompson and Dr. Lamar Arrington
Memorial Service—Mrs. J. B. Rogers, Oxford
Roll Call
Reading of Minutes
Reports—Officers, Councilors, Chairmen
Business
Recommendation from the Board
Report of Nominating Committee
Election of Officers
Appointment of delegates to A.M.A
Credentials and Registration—
Mrs. Cyrus Johnson
Adjournment

12:00 p.m.—Luncheon—Heidelberg Roof
Mrs. George Owen, presiding
Invocation—Dr. Deddins
Introductions
Address—Dr. Joseph S. Stewart, Miami, Florida

2:00 p.m.—Installation of new officers—
Mrs. George Turner, El Paso, Texas
Presentation of Gavel and President's pin
Response of Incoming President—
Mrs. R. H. Clark, Hattiesburg

2:30 p.m.—Post-Convention Board meeting—
Mrs. R. H. Clark presiding

New!

CECIL'S SPECIALTIES IN GENERAL PRACTICE

Written by 14 specialists, this book has been organized and edited by Dr. Cecil so as to give you the information you need on which cases to refer, which to manage yourself, and just exactly how to manage them. It is a book the family physician has wanted for a long time. What the general practitioner should do for the patient after he has been treated by the specialist is also clearly pointed out. The individual discussions are concise and to the point, with special attention to technics which are felt to be within the scope of practitioner's experience and equipmnt. One of the important features of the book is the cnstant emphasis on **danger points**—signs or symptoms that indicate the possible existence of cancer or other very serious disease.

By 14 Specialists. Edited by RUSSELL L. CECIL, M. D., Professor of Clinical Medicine, Emeritus, Cornell University Medical College. 818 pages, 7" X 10", with 4670 illustrations. $14.50.

J. A. MAJORS COMPANY

407 North Olive, Dallas 1, Texas
1301 Tulane Ave., New Orleans 12, La.
108 Edgewood Ave., N. E. Atlanta 3, Ga.

The Leonard Wright Sanatorium

BYHALIA, MISSISSIPPI

- For the treatment of Mental and Nervous Disorders, Alcoholics and Drug Addictions.
- Located 24 miles S.E. of Memphis on highway 78 and the Frisco R.R. Twenty acres of beautiful grounds sufficiently removed to provide restful surroundings and with a capacity limited to insure individual treatment.
- Equipped for and experienced in the use of all types of SHOCK and SLEEP THERAPY.

HOUSTON HOSPITAL, INC.

Houston, Mississippi

The Mississippi Doctor

Official Organ of the

Mississippi State Medical Association

and the

Mid-South Postgraduate Medical Assembly

W. H. Anderson, M. D., Editor-in-Chief

Mildred P. Anderson, Assistant Editor

INDEX

JUNE 1951 — MAY 1952 VOLUME 29

Published at Booneville, Mississippi

AUTHOR INDEX

(*Note*: Due to printer's oversight, the first issue of this volume continued with the pagination of previous volume, pp. 431-456. Therefore reference to any of these pages will be found in the first section

Adams, L. H. 209
Anderson, C. D. 85
Anderson, W. J. (death of) 232
Anderson, W. S. (death of) 176
Archer, J. C. (port.) 229
Arrington, L. (port.) 310
Ash, G. M. (death of) 262
Barkley, J. W. (death of) 314
Beacham, A. W. (death of) 147
Beaver, P. C. 159
Biles, J. D. (death of) 261
Bonelli, V. (death of) 116
Braund, R. R. 122
Bright, I. B. 136
Bryan, G. S. 25, 26
Bryant, R. D. 292
Burkhardt, C. F. (death of) 201
Butler, T. B., Jr. (death of) 314
Byrd, B. L. (death of) 291
Carrera, G. M. 159
Coley, S. M. (death of) 201
Cowart, E. C. 278
Crocker, E. W. (death of) 177
Crook, Jere 47, 127
Crumpton, J W. (death of) 313
Darnley, J. D. 282
Day, D. J. 113
Dickins, W. B. (death of) 314
Drennen, S. A. 313
Dugger, J. W. 202
Dunavant, W. D. 122
Dye, T. M. (port.) 198
Eason, S. E. (death of) 261
Eason, W. H. (death of) 27, 56
Edwards, B. C. 102
Everett, A. G. (death of) 261
Fatheree, J. P. 159
Feemster, L. C. 87
Fenstermacher, R. H. 135
Fischer, A. E. 265
Gamble, H. A. 287
Gay, E. D. 142
Gay, F. S. 142
Gholson, N. G. (death of) 28
Goring, R. (death of) 291
Gray, A. L. 234, 450
Guyton, A. C. 35, 92, 259
Guyton, B. S. 441
Hall, D. S. 66
Hall, J. C. (death of) 201
Hall, T. E. 97
Harp, W. V. 128
Harper, D. L. (death of) 56
Harris, E. J. 296
Hasie, J. L. (death of) 262
Hays, H. R. (death of) 177
Henderson, E. L. 431
Henry, T. H. (death of) 314
Herrin, F. S. (death of) 262
Hewitt, J. E. (death of) 201
Hickey, P. 122
House, N. C. 107
Howell, J. B. 195
Hughes, E. C. 269
Hunter, E. W. (death of) 28
Ireland, R. B. 125
Izard, S. E. (death of) 262
Jackson, M. E. 170
Johnson, C. E. 244
Johnston, J. H., Jr. 103, 212, 276
Karelitz, S. 1
Kennedy, R. B. 148
Key, E. B. (death of) 28
Kirk, R. D. 87
Kisner, W. H. 434
Knight, N. C. 438
Knox, J. C. Jr. 216
Lipscomb, E. J. (death of) 177
Lipscomb, W. 224
Long, L. W. 190, 197
Lynch, R. 31
McArthur, R. H. 166, 286
McCool, D. C. 8
McDaniel, L. H. 25
McKinnon, H. L. 149
McLean, R. B. 220
Mc Nair, J. C. (death of) 177
Magiera, E. A. 113
Marland, T. J. 306
Marshall, W. 41
Massie, F. M. 155
Matas, R. 229
Meloan, E. L. 256
Messer, A. L. 183
Middleton, T. F. 73
Mitchell, J. R. 79
Montfort, J. J. 167
Montgomery, D. C., Jr. 161
Motley, L. 207
Murry, A. V. (death of) 28
Myklebust, H. E. 57
Naumann, H. N. 52
Netterville, R. E. 296
Nobles, E. R. 18
O'Kelley, Gertrude 305
O'Neal, K. R. 68
Owen, Mrs. G. W. (port.) 454
Payne, W. W. 138
Pearce, J. H. (death of) 261
Pearson, G. T. 42
Pitzman, M. 53
Reid, L. R. 40
Rice, Margaret E. 178
Rhymes, R., (death of) 201
Richardson, E. L. (death of) 27
Roark, M. E. 8
Robertson, G. W. (death of) 116
Robinson, B. L. (death of) 27, 56
Rogers, G. W. 193
Rogers, J. B. 62
Rosamond, J. S. (death of) 27
Rosser, Curtice 111
Royals, T. E. (death of) 314
Russell, J. C. 258
Santa, L. S. 254
Schifrin, N. 1
Shands, H. R. (death of) 291
Sheffield, H. C. (death of) 313
Shurley, E. R. (death of) 261
Simmons, J. D. (death of) 232
Simmons, J. F. (death of) 314
Smith, Cassie B. 263
Smith, D. S. (death of) 232
Smith, H. T. (port.) 309
Smith, T. J. (death of) 177
Stewart, J. S. (port.) 310
St. Germain, E. L. 66
Stubblefield, D. F. (death of) 262
Sutherland, H. L. 18
Switzer, D. M. 187
Tatum, J. P. 99
Thompson, J. G. 16
Tigert, R. (death of) 177
Trice, J. L. (death of) 28
Twente, G. E. 199, 212
Underwood, Felix J. 145, 225
Van Alyea, O. E. 301
Wall, J. P. (ed.) 259
Wall, J. P. (death of) 262
Wallace, J. A. 153
Ware, M. B. (death of) 262
Weaver, J. A. 250
Weed, J. C. 78
Weeks, J. T. 23
Weinstein, B. B. 117
Weinstein, D. 117
Wessler, G. 91
West, O. T. 245
Wiener, W. B 219
Whitaker, D. W. (death of) 314

Index

Wiggins, W. (death of) 232
Wilson, H. 11, 109, 227
Young, E. B. (death of) 116
Young, L. E. 239

SUBJECT INDEX

(*Note*: Due to printer's oversight, the first issue of this volume continued with the pagination of previous volume, pp. 431-458. Therefore reference to any of these pages will be found in the first section of this volume.)

Abdomen
  —wounds. (R. Lynch) 31
Abortion
  —etiology and treatment of spontaneous. (Edward C. Hughes) 269
Accidents
  —our problems. (ed.) 81
Alcoholism
  —antabuse therapy. (J. A. Wallace) 153
Anemia
  —management of more difficult chronic anemias. (L. E. Young) 239
  —sickle cell anemia an hematologic challenge. (G. W. Rogers) 193
Anesthesia
  —post anesthesia observation room. (C. D. Anderson) 85
  —rectal sodium pentothal anesthesia in children. (Gertrude O'Kelley) 305
  —resuscitation in respiratory and circulatory arrest. (A. C. Guyton) 35
Antibiotics
  —review of the recent literature. (E. C. Cowart, Jr.) 278
  —pres. status in treating common contagious diseases (S. Karelitz & N. Schifirn) 1
Arrhythmia
  —auricular flutter. (J. P. Tatum) 99
Asthma
  —Gay treatment. (F. S. Gay and E. D. Gay) 142
Atomic Bomb
  —med. aspects of atomic warfare and radioactive isotopes. W. W. Payne) 138
Biography, Medical
  —life of Dr. Hugh Lewis Sutherland. E. R. Nobles) 18
  —Dr. T. M. Dye 199
Birth Injuries
  —cerebral birth injury in retrospect. (ab.) (W. D. Belnap ,et al) 150
Blood Plasma
  —BAWI plant at Cleveland makes equipment for armed forces (Baxter Uaboratories, Inc.) ..174
Blood Pressure, High
  —role of surgery in treatment of essential hypertension. (H. Wilson) 11
Brucellosis
  — diagnosis and treatment. (T. E. Hall) 97
Burns
  —treatment -early. (L. H. Adams) 209
Cancer
  —American Cancer Society, (Miss. Divsn.) (ed.) (program) 111
  — diag. and management of the patient with a lump in the neck (R. R. Braund, W. D. Dunavant & P. Hickey) 122
  —physician's attitude toward patient with cancer phobia. (H. Wilson) 109
  —postgraduate course on cancer detection. (ed.) 230
  —private physician's responsibility to volunteer cancer control program. (H. A. Gamble) ..287
  —Watchman, what of the night? (Francis M. Massie) 155
Cardiovascular System
  —coronary insufficiency. (Ira B. Bright) .. 136
Child Guidance
  —E. A. Magiera 113
Children, Nervous and mental disorders
  —cerebral dysrhythmia associated with childhood behaviour a clinical report. (D. C. McCool & M. E. Roark) 8
Children, Nutrition
  — some medical aspects of nutrition of school age children. (N. C. Khignt) 438
Colon, Dilatation
  —Hirschsprung's disease (congenital megaclon). (J. H. Johnston, Jr.) 103
Communicable Diseases
  —control in Miss. (A. L. Gray) 234, 450
  —present status of treatment with the antibiotics and sulfonamides (S. Karelitz & N. Schifrin) 1
Convalescence
  —convalescent care of the medical patient. (N. C. House) 107
Coronary Vessels
  — difficulties in the early recogition of myocardial infarction. (A. L. Messer) 183
Deafness
  — differential diag. in young children. (H. R. Myklebust) 57
Diagnosis
  — limitations and errors in histopathologic diagnoses. (W. V. Hare) 128
Dysmenorrhea
  — J. C. Knox, Jr. 216
Economics, Medical
  —1951—medicine's first year of grace (E. L. Henderson) 431
Edema
  —physiological basis of different types. (A. C. Guyton) 92
Editorials
  — 24, 47, 81, 109, 145, 172, 228, 249, 308, 448
Education, Medical
  —in Mississippi. (T. J. Marland) 306
  —preparedness for the university hospital. (ed.) L. W. long 197
  — State Board examinations 313
Esophagus
  —congenital atresia of the esophagus with tracheo-esophageal fistula. (G. E. Twente & J. H. Johnston, Jr, ... 212
  —esophageal diverticula. (R. E. Netterville & E. J. Harris) 296
Eyes, Diseases
  — recent developments in treatment. (J. B. Rogers) 62
Goiter
  —surg. treatment of nodular goiters. W. H. Kisner) 434
Gynecology
  — pitfalls in. (G. T. Pearson) 42
Headache
  —common types and their treatment. (J. D. Darnley) 282
Health Education
  — Cassie B. Smith 263
Heart Diseases
  — heart organization formed. (ed.) 110
  —in pregnancy. K. Ramsey O'Neal 68
Hernia, Inguinal
  —direct and indirect hernia repair. (L. W. Long 190
  — treatment in infants and children. (W. J. Potts, et al) (ab.) 112
Histoplasmosis
  — Eva L. Meloan 256
Hospitals
  — Commission on Financing (A.H.A. & A. M.A.) (ed.) 308
  —Greenwood hospital opens. (ed.) 309
Hospitals, Economics
  —coverage in Miss. (tax-supported) (B. S. Guyton) 441
  — our indigent sick. (ed.) 174
Hoye's Sanatorium 244
Hygiene
  —a noble service only physicians can render. (J. T. Weeks) 23

Index

Immunizations
—local paralysis in children after injections. (J. K. Martin) (ab.) ... 52
Interpreting Medical Literature
—30, 51, 112, 150, 181, 205, 233, 265, 452
Intestines
— intestinal obstruction and related intestinal lesions. (L. S. Santa) ... 254
Labor
—etiol. and treatment of prolonged labor. (Richard D. Bryant) ... 292
—medical induction using intravenous pitocin. (D. M. Switzer) ... 187
—problem labor patient. (O. T. West) ... 245
Library, Medical
(see under: Miss. State Bd. of Health
Lungs, Collapse
—middle lobe syndrome. (J. H. Johnston, Jr.) ... 276
Medical Care
—county societies urged to cooperate with essay contest ... 175
—coverage in Mississippi. (B. S. Guyton) ... 441
—who is failing. (ed.) ... 24
—free medicine. (ed.) ... 173
Medical Technology
—the medical technologist. (M. E. Jackson) .. 170
Medicine, Practice
— what is organized medicine? (J. Joel Montfort) ... 167
Mental Health
(ed.) ... 308
Mid-South Postgraduate Medical Assembly
176, 196, 228, 267, 309
—President, H. T. Smith. (ed.) ... 309
Miss. Hospital Association
—President ... 147
Miss. State Board Of Health
—acute communicable diseases. (A. L. Gray) 234
—a fuller life for later years. (J. W. Dugger) 202
—child guidance activities ... 113
—health education. (C. B. Smith) ... 263
—industrial hygiene ... 83
—malaria in Korean veterans ... 84
—medical library ... 151
—members attending semi-annual mtg. (port.)
— ... 82
—preventable disease control. (A. L. Gray) .. 450
—sanitary engineering activities ... 83
—tuberculosis control ... 50
— vital statistics, ... 29
—vital statistics, 1950. (Margaret E. Rice) .. 178
Miss. State Medical Association
—action re: membership in A. M. A. ... 449
—annual meeting ... 288
—council deplores malpractice suits ... 449
—distinguished service oration on the life of Hugh Lewis Sutherland. (Eugene R. Nobles)
— ... 18
—executive secretary ... 148
—Fifty year club ... 26, 148, 311, 446
—histories available ... 200
—program ... 310, 313
—resignation of Dr. T. M. Dye ... 198
—resume of 1951 ann. meeting ... 448
—Woman's Auxiliary 28, 54, 152, 182, 206, 266, 291, 315, 453.
—Coast Counties Auxiliary ... 266
—Delta Med. Auxiliary ... 152
—Doctor's Day Luncheon ... 310
—1952 convention program ... 315
—Lowndes Co. auxiliary ... 206
—N. E. Med. Auxiliary ... 116, 206
Neck
—diag. and management of the patient with a lump in the neck. (R. R. Braund, W. D. Dunavant & P. Hickey) ... 122
Old Age
—fuller life for later years. (J. W. Dugger) 202
—our real wealth (ed.) ... 47
—the problem (ed.) Jere Crook) ... 172
Otolaryngology
—for the general practitioner. (O. E. Van Alyea) ... 301
Oxyuriasis
—enterobius vermicularis in the human uterus. (J. P. Fatheree, et al) ... 159
Pancreas
— fibrocystic disease. (Robert B. Ireland) .. 125
Pathology
—limitations and errors in histopathologic diagnoses. (W. V. Hare) ... 128
Physicians, Relation to Public
— public relations. (J. G. Thompson) ... 16
Pinworms
(see: Oxyuriasis)
Poisons And Poisoning
—ingestion by children of various substances. (A. L. King) ab.) ... 112
Poliomyelitis
—acute poliomyelitis. (J. A. Weaver) ... 250
—is the unknown spread exclusively via single cow or small herd. (M. Pitzman) ... 53
Pregnancy
—hemorrhage in. (J. C. Russel) ... 258
Prostatectomy, retropubic
—R. D. Kirk & L. C. Feemster ... 87
Pruritus, Anal
—treatment with Kutapressin. (W. Marshall) 41
Public Health
see also: Miss State Bd. of Health
—health progress in Miss. (ed.) F. J. Underwood) ... 225
Rectum
—importance of the rectal examination. (H. Wilson) ... 227
Resuscitation
—in respiratory and circulatory arrest. (A. C. Guyton) ... 35
Sinuses, Nasal
—sphenoid sinus disease. (D. C. Montgomery, Jr.) ... 161
Societies, Medical
—Academy of Obs. & Gynecol. (ed.) ... 110
—American Acad. of Gen. Pract. 46, 81, 110, 231, 290
American Coll. Allergists ... 260
—American College of Surgeons ... 175
—American Medical Association ... 431
—Arkansas Med. Assn. ... 313
—Assn. Amer. Phys. & Surgeons ... 175
—Fifty-year Club - progress ... 148, 311, 446
—R. Matas, letter from ... 26
—Internat. Coll. of Surgeons ... 26
—Miss. Heart Assn. (ed.) ... 110
—Miss. State Soc. Med. Technology ... 260
—Pan-Pacific Surg. Assn. ... 27
—Southern Med. Assn. (ann. mtg.) (ed.) 81, 110
—Student Amer. Med. Assn. ... 47
—local organization at Univ. of Miss. ... 48
Societies, Medical - Local
—N. E. Miss. Med. Soc. ... 290
— Wilkinson-Amite counties med. soc. .. 147, 200
Sulfonamides
—present status in pediatrics. (A. E. Fischer) (ab.) ... 265
Thrombosis, Coronary
—treatment. (Lyle Motley) ... 207
Tuberculosis
—control in Miss. ... 50
University of Miss. Student A. M. A. externeships wanted ... 48
Uterus
—enterobius vermicularis in the human uterus. (J. P. Fatheree, G. M. Garrera, and Paul C. Beaver) ... 159
—report of six cases of rupture. (T. F. Middleton) ... 73
Uterus, Excision
—status posthysterectomy. (R. B. McLean) .. 220
Vagina
—vaginitis. (B. B. Weinstein & D. Weinstein 177
V. A. Pathology
—case report ... 292
Veterans Admn.
— Clin. Path. Conf. ... 292
Vital Statistics
—Mississippi (M. E. Rice) ... 178